

**Gartner  
Lee  
Limited**

**HALTON REGIONAL LANDFILL - BURLINGTON  
1987 MONITORING REPORT**

**SUBMITTED TO:**

**THE REGIONAL MUNICIPALITY OF HALTON**

**BY:**

**GARTNER LEE LIMITED**

**MARCH, 1988**

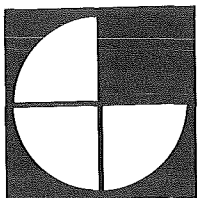
**GLL 87-224**

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March 11, 1988

GLL 87224

The Regional Municipality of Halton  
1151 Bronte Road  
Oakville, Ontario  
L6S 4Z3

Attention: Mr. J. McKay, P.Eng.

Dear Sirs:

Re: Halton Regional Landfill - Burlington  
1987 Monitoring Report

We respectfully submit the final 1987 Monitoring Report for the Halton Regional Landfill in Burlington. The report contains ground water and surface water data collected during 1987 and our interpretation of these data. The previously reported presence of attenuated leachate in ground waters 25 m south of the landfill has been confirmed based on the 1987 volatile organic analysis results. The overall impacts of the landfill on ground water and surface water appear to be minimal.

If you have any questions concerning this report please contact our office.  
Thank you for this opportunity to be of service.

Yours very truly,

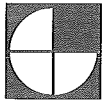
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R.C. Dickin, M.Sc.,  
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for R.E.J. Leech, B.Sc., M.Eng.Sc.,  
Senior Hydrogeologist  
Principal

Encl.

RCD:emh

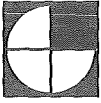


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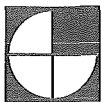
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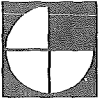


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Data

## 1.0 CONCLUSIONS

Based on the findings of the 1987 monitoring program and review of previously prepared hydrogeological and monitoring reports we draw the following conclusions:

- not disposed land*
- i) The previously reported presence of diluted and attenuated leachate in ground waters 25 m south of the landfill was confirmed based on 1987 volatile organic analysis results. Trace concentrations of leachate may also be present in ground waters 100 m south of the landfill and 10 m to the southeast, but additional monitoring is required to confirm this interpretation. It should be noted that the degree of leachate impact on ground waters appears to be minimal and even near the landfill due to dilution and attenuation. This is probably because most of the leachate produced is collected in the toe-drain/underdrain collection system. *contaminant phase*
- model* *factor* *worst case*
- ii) Based on the available surface water quality data there does not appear to be any detectable leachate impact on Falcon Creek to the west of the landfill. Minor leachate impacts may have slightly affected water quality in Falcon Creek south of the landfill, however this has not been confirmed. Interpretation of the 1987 data is complicated by the following: Highway 403 road contamination, saline ground water discharge, semi-stagnant flow conditions on three of four sampling occasions and laboratory quality control problems for some chemical parameters. The water quality in Falcon Creek downgradient of the landfill remains similar to that found in a background stream located far from the landfill in an urban setting downstream from Highway 403.
- iii) The total volume of leachate collected in 1987 by the underdrain/toe-drain system was about 87,400 m<sup>3</sup>. This constitutes about 31% of the precipitation which fell on the landfill in 1987. This volume is believed to represent most of the leachate produced in 1987 and suggests that only a very small amount of leachate is entering the shale bedrock below the southern portion of the landfill which does not have an underdrain.



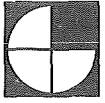
iv) Based on the available water level data the underdrain system at the north end of the landfill appears to be functioning properly. Continued monitoring is required for confirmation.

v) Leachate chemistry data does not show any consistent trend of increasing or decreasing strength. The 1987 leachate chemistry data displays inconsistencies with previous results. This is probably due to the change in analytical laboratories which occurred in 1987. This laboratory change resulted in different sample handling and analysis techniques for organic constituents, and laboratory quality control problems for inorganic and routine water quality parameters.

vi) A quality assurance program was carried out during 1987 to assess the effect of changing laboratories. Up until mid-1987 all analyses were carried out at the Ministry of the Environment (MOE) laboratory. During the latter half of 1987 trace organic analyses were carried out by Mann Testing Laboratories and inorganic and routine water quality analyses were carried out by the Halton Region Pollution Control Laboratory.

Based on this quality assurance program we have concluded that the Mann Testing results are reliable. The concentrations of volatile organic compounds are higher than previously reported by the MOE laboratory because different sample bottles and analytical techniques were used, and the samples were analyzed more promptly. Some of the initial samples submitted to Mann Testing appear to be slightly affected by residual contamination which may have inadvertently been introduced during recent ground water monitor installation. However, subsequent testing generally produced consistent reliable results.

Based on the quality assurance program, the Halton laboratory results are questionable for about half of the analytical parameters tested. This includes results for key leachate indicator parameters such as chloride, phenol and ammonia.



## 2.0 RECOMMENDATIONS

In light of the above conclusions we submit the following recommendations for your review and consideration:

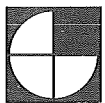
- i) Laboratory quality controls for inorganic and routine water quality parameters need to be improved in order to ensure the development of a consistent, reliable monitoring database.
- ii) Quality assurance samples ("blind" blanks, travelling blanks, duplicates, replicates and/or spikes) should continue to be submitted with each batch of samples to ensure that problems with sample handling and/or laboratory analyses are identified and resolved.
- iii) Consideration should be given to having the laboratories compile their analyses on computer databases which include previous monitoring results. During data compilation laboratory personnel could detect anomalous values related to laboratory problems and could promptly resolve the problem by re-analysis.
- iv) The installation of additional ground water monitors to the south of the landfill is not recommended for 1988. However, this should be reassessed in 1989 if the presence of leachate is confirmed 100 m south of the landfill during the 1988 monitoring program.
- v) The monitoring program should be continued as outlined on Table 1. The proposed 1988 monitoring program is similar to the 1987 program with the following exceptions:
  - (a) Ground water monitors 14-I, 14-II, 15-I, 15-II, 16-I, 16-II, 16-III and 16-IV should be tested twice per year for volatile organic compounds. Initial results obtained in 1987 suggest that suitable samples for volatile organic testing can be obtained from these PVC plastic monitors although traces



TABLE 1 BURLINGTON LANDFILL 1988 MONITORING PROGRAM

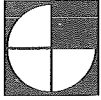
PROJECT 87-224

|                  | SAMPLING LOCATIONS                                                                                                                                                                                                                          | TASK                                                                                      | FREQUENCY<br>PER ANNUM                     | ANALYTICAL PARAMETERS                                                                                                                                                                                                                                                                                                 |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Groundwater      | 18-II, 18-III, 21-I,<br>21-II, 21-III, 22-I,<br>22-II, 22-III                                                                                                                                                                               | Develop, sample and<br>deliver samples<br>to laboratories                                 | 2                                          | Conductivity, chloride,<br>hardness, alkalinity,<br>nitrogen (TKN, NH <sub>4</sub> ), BOD,<br>COD, phenols                                                                                                                                                                                                            |
|                  | 14-I, 14-II, 15-I, 15-II,<br>16-I, 16-II, 16-III, 16-IV,<br>23-I, 23-II, 23-III,<br>24-I, 24-II, 24-III,<br>26-I, 26-II, 26-III,<br>27-I, 27-II, 27-III,<br>28-I, 29-I, 30-I, 31-I,<br>32-I, 32-II, 32-III,<br>33-I, 34-I,<br>HC-15-1,2,3,4 | Same as above                                                                             | 2                                          | Same as above plus volatile<br>organic scan                                                                                                                                                                                                                                                                           |
|                  | All existing ground<br>water monitors.                                                                                                                                                                                                      | Measure water<br>levels.                                                                  | 2                                          |                                                                                                                                                                                                                                                                                                                       |
| Surface<br>Water | SW1A, SW2, SW3, SW4, SW5,<br>SW12, SW13, SW14, SW15,<br>SW16, SW17, SW18, SW19,<br>SW20, SW21                                                                                                                                               | - Sample<br>- Measure flows at<br>time of sampling<br>- deliver samples<br>to laboratory. | 4                                          | Conductivity, pH, Chloride,<br>hardness, alkalinity,<br>nitrogen (TKN, NH <sub>4</sub> , NO <sub>3</sub> , NO <sub>2</sub> )<br>BOD, COD, phosphorous,<br>phenol, iron, suspended<br>solids                                                                                                                           |
|                  | Falcon Creek<br>Indian Creek                                                                                                                                                                                                                | Inspect stream bank<br>and valley walls for<br>springs and sample<br>if sufficient flow.  | 4                                          | Same as for surface water<br>samples above.<br><br>Read staff gauge at SW3                                                                                                                                                                                                                                            |
| Leachate         | Toe-drain, manhole 23                                                                                                                                                                                                                       | Sample and deliver<br>samples to laboratory.                                              | 4                                          | Conductivity, pH, chloride,<br>hardness, alkalinity,<br>nitrogen, (TKN, NH <sub>4</sub> , NO <sub>3</sub> , NO <sub>2</sub> )<br>BOD, COD, phosphorous,<br>phenol, iron, suspended<br>solids, heavy metal scan,<br>priority pollutant trace<br>organics, including<br>volatiles, extractibles,<br>PCB and pesticides. |
|                  |                                                                                                                                                                                                                                             | Monitor leachate flow<br>rate. (Regional Staff)                                           | Continuously                               |                                                                                                                                                                                                                                                                                                                       |
|                  | Entire Site                                                                                                                                                                                                                                 | Map leachate springs<br>and document repair<br>work (Regional Staff)                      | As required,<br>minimum -<br>frequency 12. |                                                                                                                                                                                                                                                                                                                       |



of PVC cement components (THF and 2 butanone) were detected in one monitor (16-III).

- (b) Two older monitors 12-II and 13-II which were installed in the 1970s should be deleted from the sampling program. Based on field observations the reliability of samples from these monitors is open to question.
- (c) Surface water sampling stations SW6, SW7, SW10, SW11, SW18, SW19, SW20 and SW21 should be deleted from the sampling program. These locations are dry most of the time except during or immediately after heavy precipitation events.
- (d) Twice weekly streamflow measurements at the SW3 weir on Falcon Creek should be reduced to four times per year during sampling visits. Sufficient data have been collected to characterize the nature of flows in Falcon Creek.
- (e) The collection and analysis of three replicate samples taken one week apart from designated monitors should not be repeated in 1988. The data collected in 1987 is sufficient to assess short term variability in volatile organic concentrations.



### 3.0 INTRODUCTION

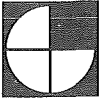
Gartner Lee Limited (GLL) were retained on August 13, 1980 by the Regional Municipality of Halton to carry out a monitoring program at the Halton Regional Landfill in Burlington. The Region authorized the 1987 sampling program under Purchase Order No.'s 83188 and 83001. This monitoring program was required by the Ministry of Environment (MOE) as part of the provisional Certificate of Approval No. A210102. This is the eighth annual monitoring report on data collected at this site. The monitoring program is ongoing in accordance with the recommendations in this report.

The purpose of the ground water monitoring program is to assess the impact of the existing landfill on ground water quality. The purpose of the surface water monitoring program is to assess the impact, if any, of the landfill site operations on the water quality of Falcon Creek and Indian Creek, and to determine the effectiveness of the toe-drain collection system in preventing overland leachate flow.

The landfill site is expected to be completely filled and closed by the end of 1988.

A considerable amount of hydrogeological work has already been completed at this site. Previous reports were reviewed and pertinent data and interpretations are included in this report. Previous GLL reports on this site are referenced in Section 9.0.

Laboratory analyses for this monitoring program were carried out by the Ministry of the Environment until mid-1987. Subsequent analyses have been carried out by the Region of Halton Laboratory (routine and inorganic parameters) and Mann Testing Laboratories (trace organics). In order to assess the effect of this change on the monitoring data base a quality assurance program was instituted in 1987. The results of this QA program are presented in Section 8.0 of this report.

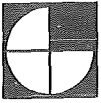


#### **4.0 BACKGROUND PHYSIOGRAPHY AND GEOLOGY**

Regionally the Burlington Landfill is situated on the lower slopes of the Niagara Escarpment in an area heavily dissected by gullies and ravines. The lands comprising the site slope moderately towards the south and east, except as altered by the existing fills. A deep ravine, eroded into the shale bedrock, borders the western periphery of the site. Falcon Creek flows intermittently to the south along the ravine bottom.

A less pronounced ravine borders the northeast side of the site. Intermittent drainage channels to the northeast of the property are a part of the Indian Creek drainage basin.

The northern portion of the site is mantled by a relatively dense to very dense, clayey, silt till. This till is absent in the southern part of the site. A layer of weathered Queenston shale, varying in thickness, occurs beneath the till in the northern part of the subject area and at surface in the south. Unweathered Queenston shale forms the bedrock below the whole site.



## 5.0 LEACHATE

### 5.1 LEACHATE COLLECTION

Rainfall and snowmelt which infiltrates through the refuse will produce leachate. At the Burlington Landfill a toe-drain leachate collection system has been retrofitted around the perimeter of the site. The toe-drain was extended around most of the site as part of the "continued use" landfill expansion. Construction of the last section of the perimeter toe-drain along the east side of the landfill was completed in May 1987. The purpose of the toe-drain is to reduce leachate discharges from springs at the toe of the landfill into the surrounding environment.

The northern part of the landfill is underlain by a layer of clayey silt till and is equipped with an underdrain system for leachate collection (see Figure 1 in map pocket). The purpose of the underdrain system is to collect leachate and thus reduce downward movement into the shale bedrock.

The southern part of the landfill is older and is not equipped with an underdrain system. The layer of clayey, silt till thins to the south and in places the refuse lies directly on shale bedrock. Leachate can enter the ground water flow system in the shale bedrock in this area.

All collected leachate from the toe-drain and underdrain is discharged to the Burlington sanitary sewer system. A flow meter to record leachate flow volumes was installed on the toe-drain in the fall of 1986.

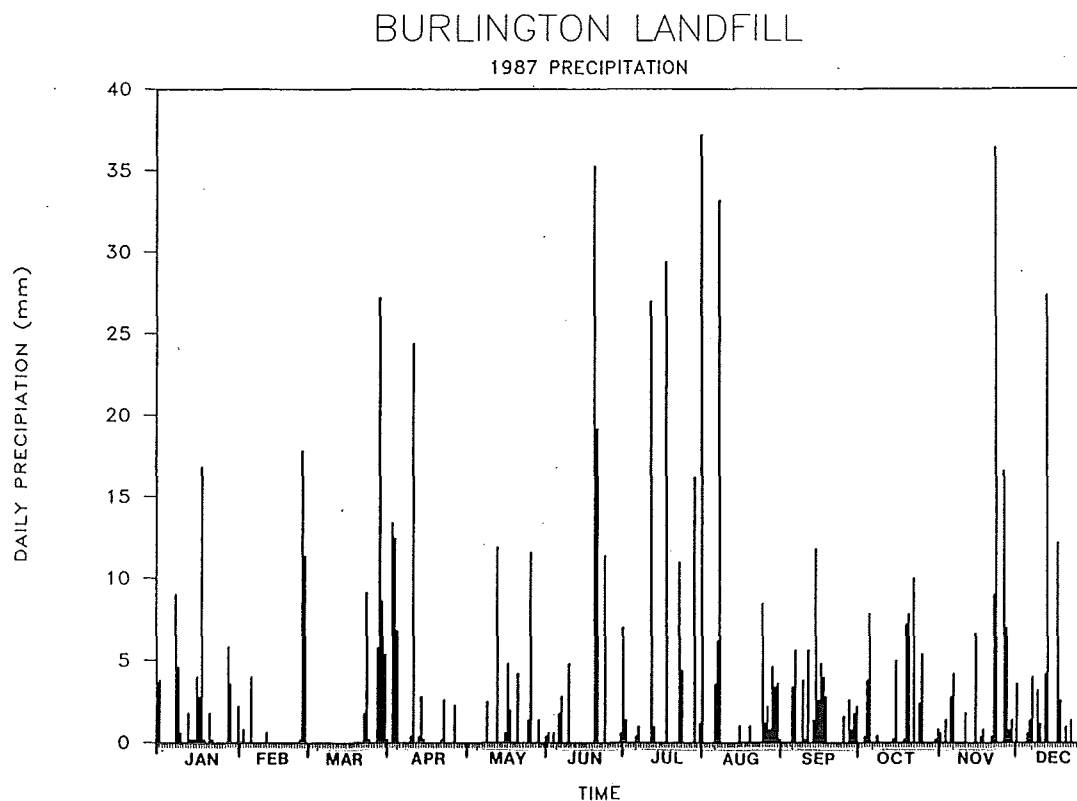
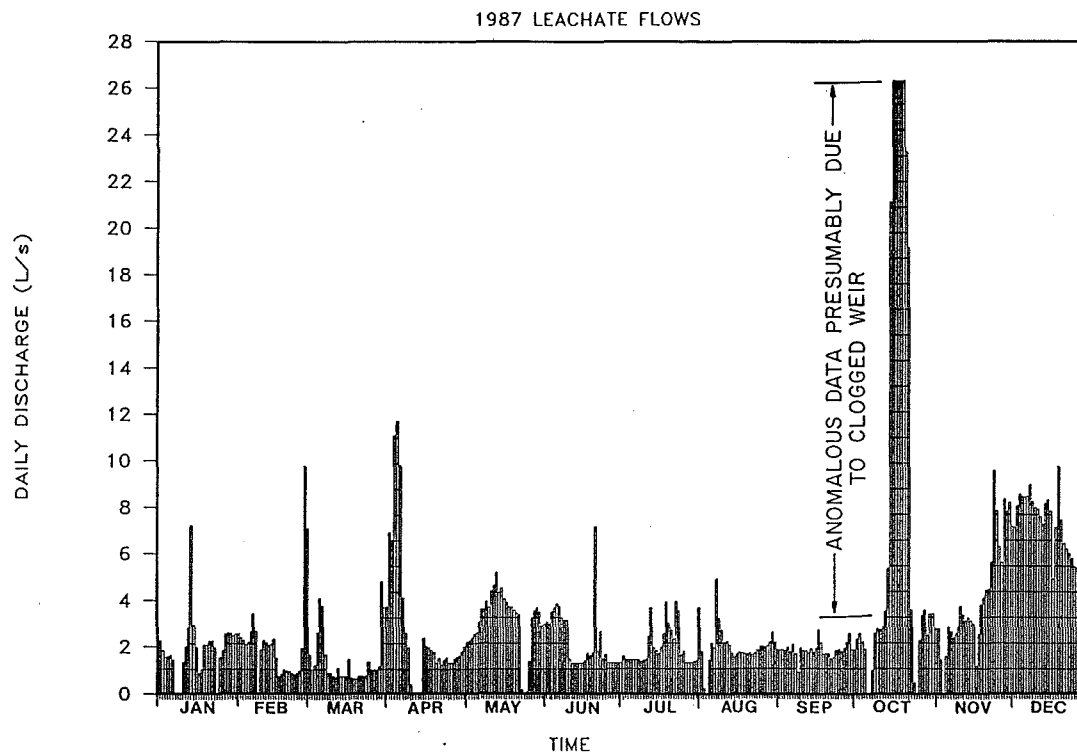
Leachate flow data for the period October 1986 to January 1988 is tabulated and presented in Appendix II. The average leachate flow rate during 1987 was about 2.8 L/s.

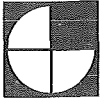
Daily leachate flow rates and daily precipitation from the Royal Botanical Gardens Meteorological Station are plotted versus time on Figure 2.

# Figure 2

## BURLINGTON LANDFILL

### Leachate Flows And Precipitation





Base leachate flows during dry weather in 1987 generally ranged between 1 and 4 L/s. Leachate flow rates in the toe-drain generally increase after precipitation events of 10 mm or more. The response occurs relatively rapidly, usually within one day.

The total volume of leachate collected in 1987 was about 87,371 m<sup>3</sup> (data corrected for anomalous readings in October). Total precipitation for 1987 was 805 mm. The total volume of leachate collected was compared to the total volume of precipitation which fell on the landfill area (34.5 ha). About 31% of the total precipitation volume was collected in the leachate collection system.

Based on Ministry of the Environment research at the Britannia Road Landfill in the Region of Peel it is estimated that about 75% of rainfall is lost via evapotranspiration or runoff and about 25% infiltrates into the refuse through a clay landfill cap on an annual basis. If these percentages are applicable to the Burlington site it would suggest that most of the leachate produced by infiltrating precipitation is collected and thus very little enters the ground water flow system in the shale bedrock below the landfill. The volume of leachate collected probably exceeds the predicted leachate production rate (25% of precipitation) because the northern portion of the site was actively being filled in 1987. The clay final cover has not been constructed in this area thus there is less runoff and more infiltration with resultant leachate production.

Figure 3 illustrates 1987 water budget information for the Burlington Landfill, based on data from the nearby Hamilton Royal Botanical Gardens Climatology Station. The upper part of Figure 3 illustrate the monthly water balance based on Thornthwaite and Mather calculations assuming a soil moisture storage of 10 mm. A surplus occurred during the winter, early spring and late fall. There was a water surplus of 325 mm for the year. Supporting water balance calculations are presented in Appendix II.

The bottom part of Figure 3 is a schematic showing the 1987 water budget for the completed, covered portions of this site. The evapotranspiration value was calculated using long term stream flow data from nearby Grindstone Creek at Aldershot (Station 2H012, 8200 ha catchment). The evapotranspiration value was confirmed using the methods of Thornthwaite and Mather, 1957.

# ACTUAL WATER BALANCE

HAMILTON ROYAL BOTANICAL GARDENS, 1987

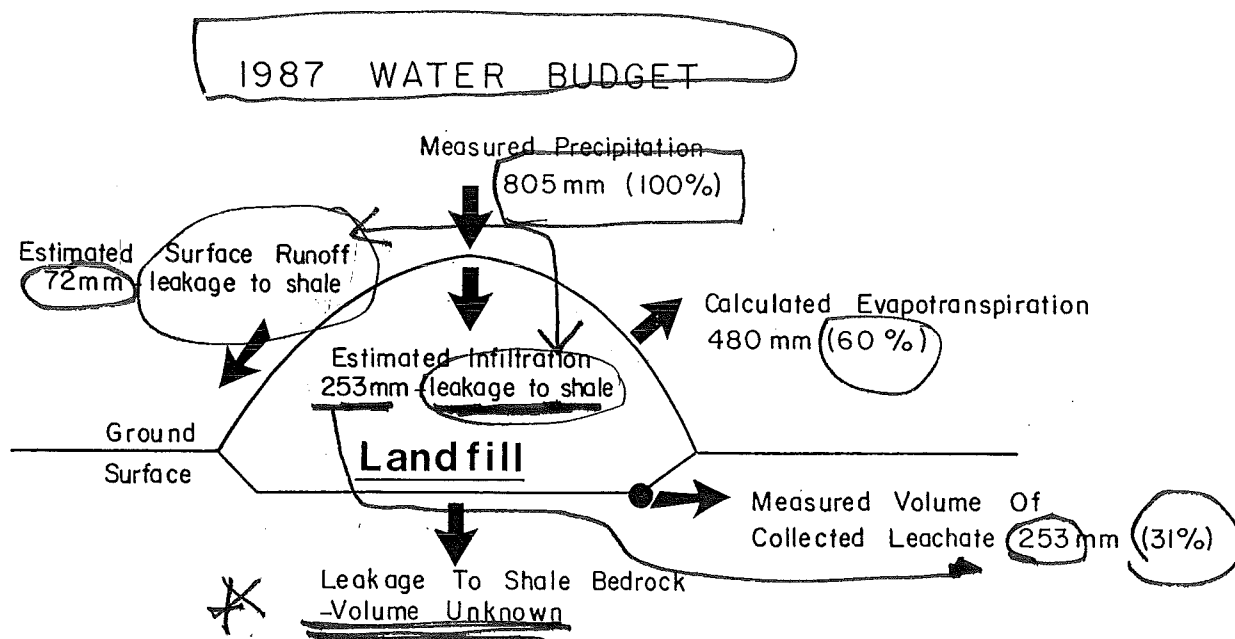
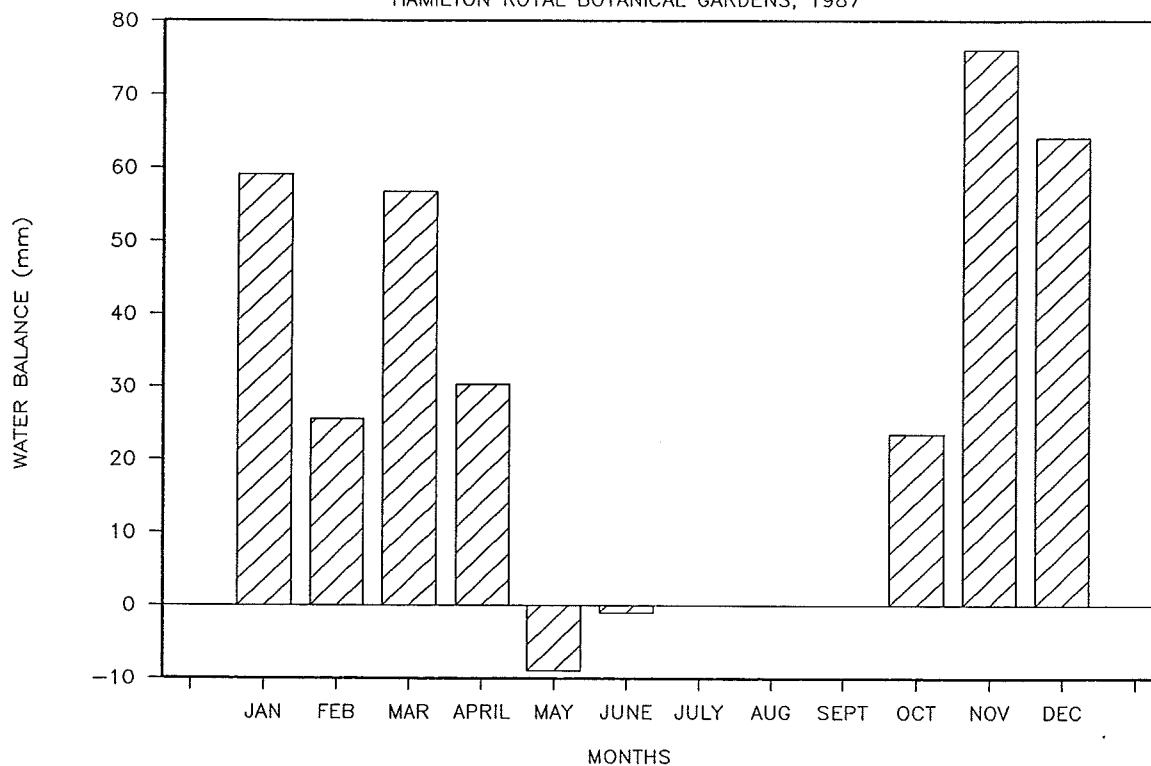
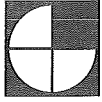


Figure 3

## 1987 WATER BUDGET INFORMATION



The volume of leachate collected in the toe-drain in 1987 is equivalent to an infiltration rate of 253 mm over the entire 34.5 ha site. The 1987 infiltration rate into the landfill is assumed to equal to the amount of leachate collected in the toe drain plus any volume lost through leakage into the shale bedrock. The amount of leakage cannot be accurately measured but it is probably a very small percentage of the total precipitation.

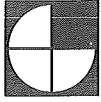
The water budget illustrated in Figure 3 assumes that there is negligible ground water inflow into the landfill. This assumption appears reasonable since the landfill covers most of the local ground water recharge area and the low permeability till soils at the north end of the landfill are not expected to yield much water.

The site was inspected for leachate seepages by GLL staff during surface water sampling visits. Regional staff inspected the site more frequently. Five perched seepages were noted on the landfill. These were promptly repaired by excavating down through the clayey silt daily cover material to permit hydraulic connection and then backfilling with clear stone and replacing the final cover.

One leachate seepage was observed about 20 m outside the toe-drain on the west side of the landfill (Falcon Creek ravine). It is about 400 m north of the loading facility as shown on Figure 1. This seepage was previously reported in the 1983, 1984, 1985 and 1986 monitoring reports. There is no measurable flow and the leachate reinfilters into the ground about 5 m down-slope. The seepage is over 150 m from Falcon Creek and the property boundary. There is no evidence of direct overland flow of leachate into Falcon Creek. Monitor 33-I was installed in this area in 1987 to further investigate potential leachate movement in this area.

## 5.2 LEACHATE CHEMISTRY

Leachate samples were collected by GLL from toe-drain manhole 23 (see Figure 1) in May, August, October and December, 1987. The May, August and October samples were submitted to the MOE laboratory for analysis of routine water quality parameters, heavy metals, volatile organics, extractable organics and a PCB and pesticide scan. The December leachate sample was submitted to the Halton Regional Laboratory and



Mann Testing Laboratory for analysis of the same parameters. These results are presented in Appendix III.

Table 2 presents the average concentrations of selected parameters in Burlington Landfill leachate for 1984, 1985, 1986 and 1987. No consistent overall trends of increasing or decreasing leachate concentration are apparent. The average 1987 concentrations of some parameters such as the volatile organic compounds appear to be significantly affected by the change in laboratories which occurred during this year. Table 2 also presents the Region of Halton sanitary sewer bylaw 97-79 concentration limits. Average concentrations of BOD, iron and zinc exceeded the bylaw limits in 1987 as they did in 1986.

The volatile organic concentrations in the October, 1987 Mann Testing analyses are generally more than an order of magnitude higher than the December 1987 Mann Testing analyses. The October sample was collected after an extended period of dry weather. This apparently resulted in much higher volatile organic contaminant levels. The December leachate sample was collected during a period of wet weather.

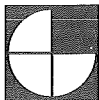
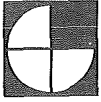


TABLE 2 AVERAGE LEACHATE CHEMISTRY

| PARAMETER                    | 1984<br>AVERAGE | 1985<br>AVERAGE | 1986<br>AVERAGE | 1987*<br>AVERAGE | SEWER BY-LAW<br>97-79 |
|------------------------------|-----------------|-----------------|-----------------|------------------|-----------------------|
| Conductance (umhos/cm)       | 8348            | 8923            | 8303            | 6787             |                       |
| pH                           | 6.8             | 6.9             | 7.3             | 7.1              | 6 - 10.5              |
| Hardness (mg/L)              | 2817            | 2440            | 2097            | 2768             |                       |
| Alkalinity (mg/L)            | 3254            | 3436            | 3028            | 2516             |                       |
| Chloride (mg/L)              | 1061            | 1158            | 869             | 564              |                       |
| Phosphorous Total (mg/L)     | 1.8             | 1.6             | 1.2             | 1.7              |                       |
| TKN (mg/L)                   | 227             | 288             | 227             | 189              |                       |
| Ammonia (mg/L)               | 179             | 249             | 140             | 191              |                       |
| Phenols (ug/L)               | 1544            | 1726            | 1408            | 1159             |                       |
| BOD (mg/L)                   | 4298            | 5565            | 3423            | 1667             | 300                   |
| COD (mg/L)                   | 5273            | 5737            | 8222            | 5443             |                       |
| Iron Total (mg/L)            | 497             | 64              | 92              | 143              | 50                    |
| Cadmium Total (mg/L)         | <.005           | <.005           | <.015           | <.1              | 2.0                   |
| Chromium Total (mg/L)        | 0.027           | 0.12            | 0.29            | <.5              | 3.0                   |
| Copper Total (mg/L)          | <.006           | 0.06            | 0.16            | <.5              | 3.0                   |
| Nickel Total (mg/L)          | <.03            | 0.07            | 0.08            | <.5              | 3.0                   |
| Lead Total (mg/L)            | 0.01            | <.06            | <.15            | <.5              | 3.0                   |
| Zinc Total (mg/L)            | 0.4             | 2.0             | 4.4             | 8.2              | 3.0                   |
| Dichloromethane (ug/L)       | <10             | 1990            | 753             | 2837             |                       |
| 1,1-Dichloroethane (ug/L)    | <10             | 260             | 58              | 639              |                       |
| 1,1,1-Trichloroethane (ug/L) | <10             | 74              | <10             | <10              |                       |
| Benzene (ug/L)               | 10              | 16              | <10             | 69               |                       |
| Trichloroethylene (ug/L)     | <10             | 17              | 36              | 126              |                       |
| Toluene (ug/L)               | 500             | 520             | 510             | 1358             |                       |
| Tetrachloroethylene (ug/L)   | <10             | 10              | <10             | 32               |                       |
| Ethylbenzene (ug/L)          | 40              | 61              | 38              | 169              |                       |
| M- and P-xylene (ug/L)       | 125             | 324             | 189             | 502              |                       |
| O-xylene (ug/L)              | 40              | 156             | 51              | 263              |                       |

\* Note : Change in laboratories in mid-1987 may  
have caused biases in the 1987 averages.



## 6.0 GROUND WATER

### 6.1 GROUND WATER FLOW

Ground water levels were measured in August and November 1987 in existing on-site monitors. Figure 4 (map pocket) illustrates the water table configuration and shallow ground water flow directions on November 17, 1987. The overall ground water flow pattern has not changed significantly from that presented in previous monitoring reports. Flow is generally to the southeast towards Lake Ontario with local components of flow towards adjacent streams and wetland areas.

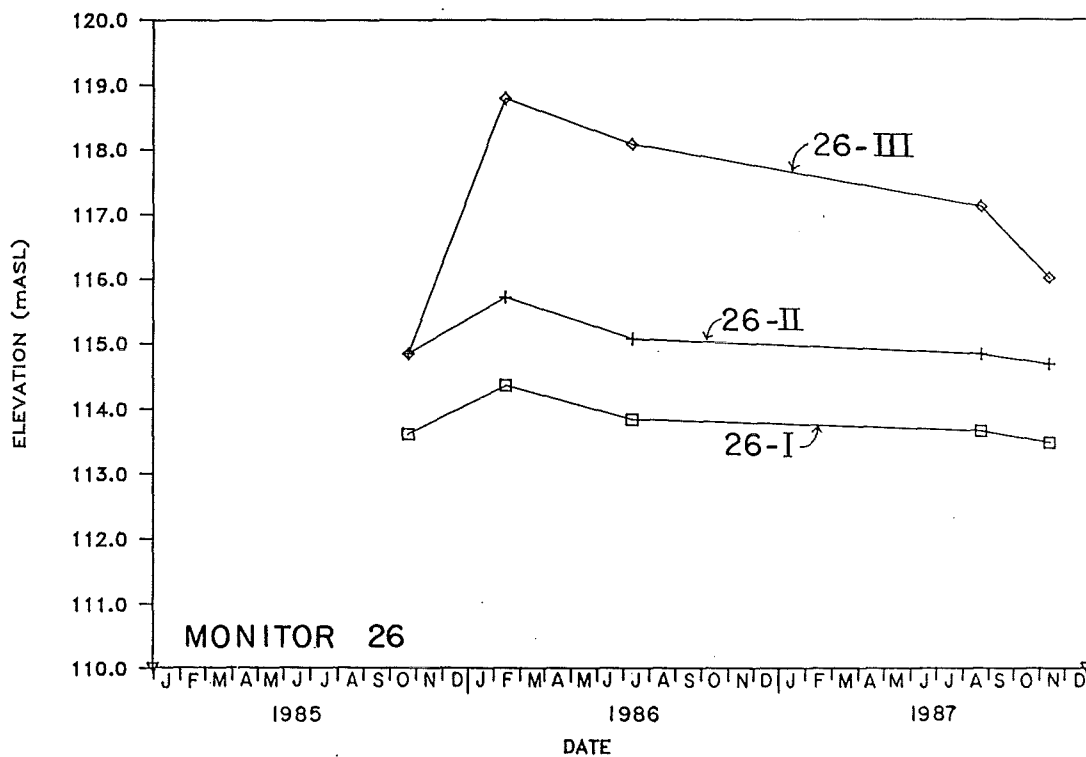
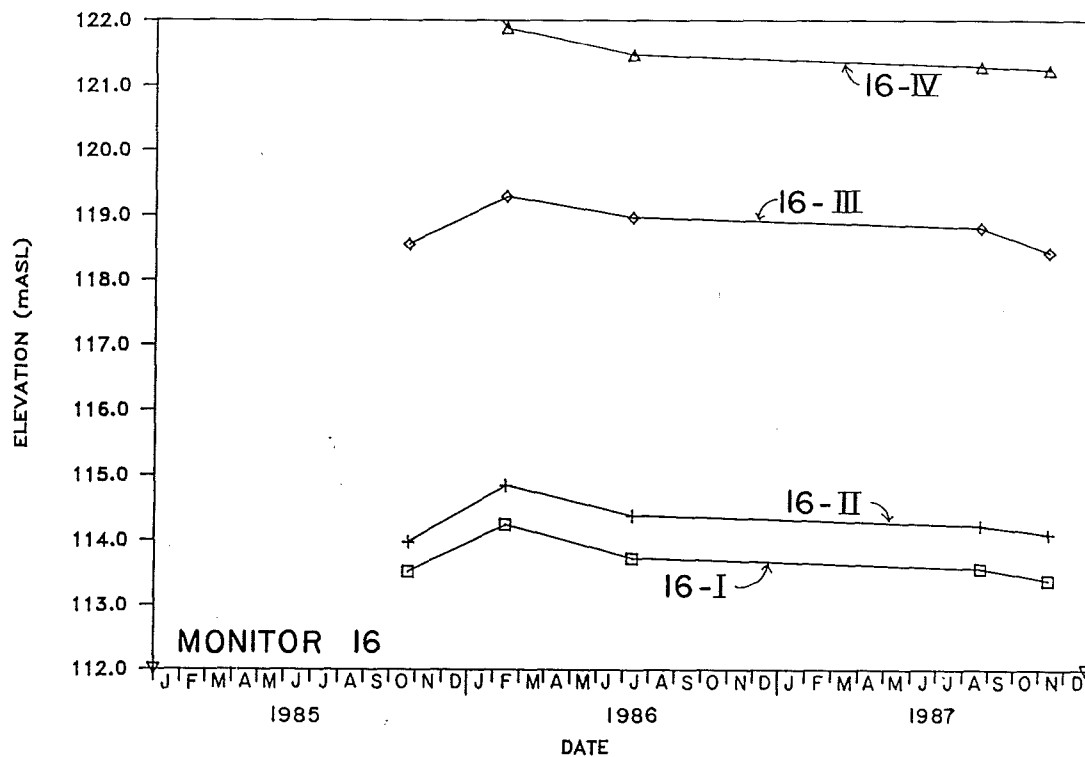
Figures 5 and 6 present ground water elevation hydrographs for monitors at borehole locations 16, 23, 24 and 26.

Vertical hydraulic gradients in the landfill area are generally downwards indicating recharge conditions. Vertical hydraulic gradients in low wetland areas are fairly flat indicating primarily horizontal ground water flow.

Ground water levels tend to fluctuate over a range of 0.5 to 1.5 m in response to seasonal infiltration events. Water levels in shallow monitors tend to fluctuate over a wider range than water levels in deeper monitors.

Monitor 25-I is a standpipe installed through the northern underdrained portion of the landfill. It penetrates the entire thickness of the refuse plus about 2 m of the native materials below. This monitor was dry during 1985 and 1986 which suggested that the refuse in this area had not reached field capacity. Leachate levels were measured in monitor 25-I in August and November 1987. The leachate elevations were similar or less than the underdrain invert elevations in this area (about 168.5 m ASL) which suggests very little mounding is occurring between the underdrain collector pipes at the present time.

Water level elevations in shallow monitors at the north end of the landfill (21-III, 22-III, and 23-III) are higher than the underdrain invert elevations in this area. This suggests that, at the north edge of the landfill, lateral ground water in the upper till is southward

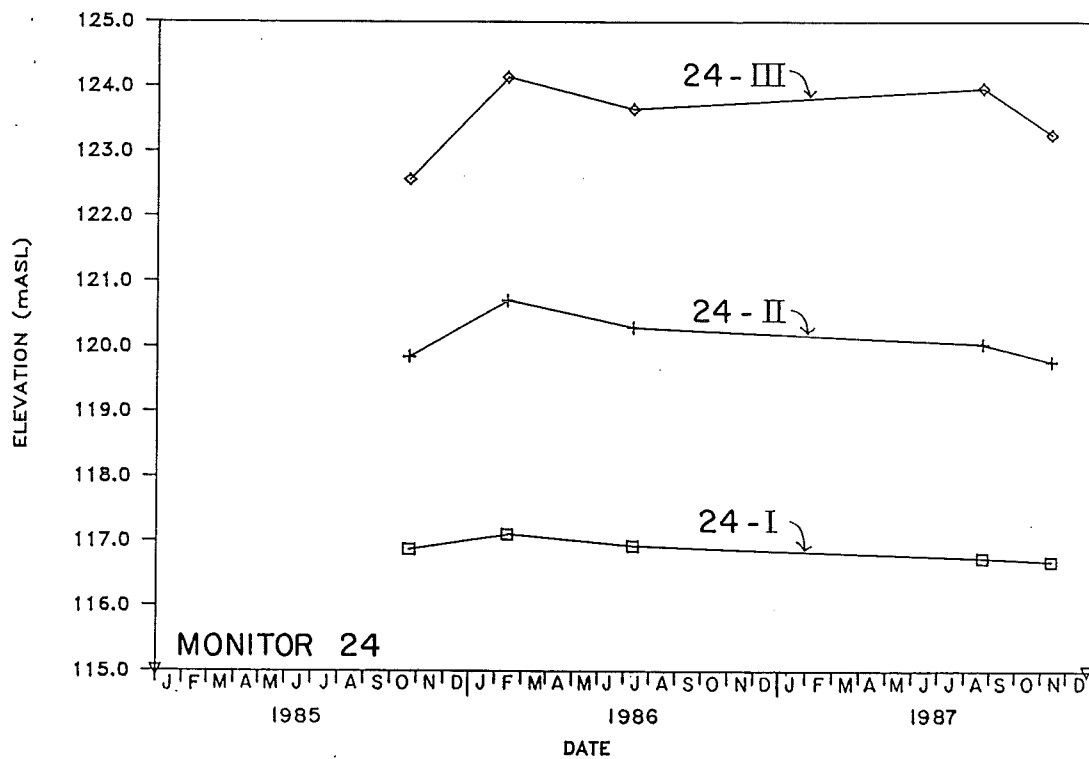
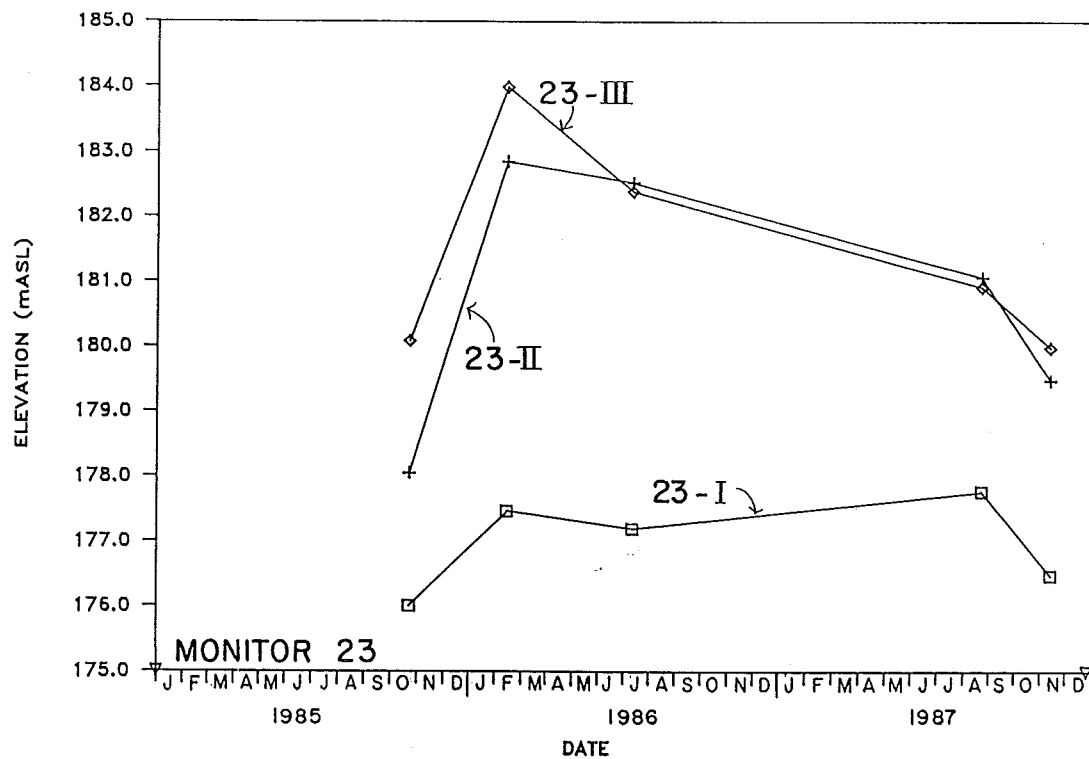


## Ground Water Elevation Hydrographs For Monitors At Boreholes 16 And 26

**Figure 5**

GLL Project 87-224



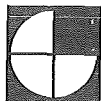


## Ground Water Elevation Hydrographs For Monitors At Boreholes 23 And 24

**Figure 6**

GLL Project 87-224





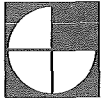
toward the landfill. Deeper monitors screened in the shale bedrock (21-I, 22-I and 23-I) generally have water level elevations similar to the underdrain invert elevations.

The three new ground water monitors installed to the southeast of the landfill in 1987 (32-I, 32-II, 32-III) were slug tested to determine the in-situ hydraulic conductivity (permeability) of the shale bedrock. The slug test data and plots are presented in Appendix I and the results are summarized below.

| Monitor | Screened<br>Interval<br>Depth<br>(m) | Hydraulic<br>Conductivity<br><br>m/s |
|---------|--------------------------------------|--------------------------------------|
| 32-I    | 17.6-18.2                            | $1 \times 10^{-7}$                   |
| 32-II   | 11.3-11.9                            | $2 \times 10^{-6}$                   |
| 32-III  | 5.5- 6.1                             | $3 \times 10^{-8}$                   |

These values are within the range of those previously reported for the shale bedrock at this site (GLL, December 1986). However, the value of  $2 \times 10^{-6}$  m/s for monitor 32-II is one of the highest shale hydraulic conductivities measured on this site.

Tritium age dating of ground waters at this site was previously recommended to increase understanding of the ground water flow system. Although this work was not carried out in 1987, results of tritium age dating of ground waters from the adjacent property to the east were reviewed (Trow Hydrology Consultants, Sept. 1986, Halton Region Landfill Technical Report, Site F - Burlington). These results indicated a general decrease in tritium concentration with depth. The depth of tritium penetration was variable across the site as a results of local variations in vertical fracturing. Thus it is not possible to correlate ground water depth with ground water age across the site. Consequently the recommendation to carry out tritium age dating at the Burlington Landfill is withdrawn for the present time.



## 6.2 GROUND WATER QUALITY

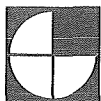
### 6.2.1 Volatile Organic Compounds

Ground water samples were collected and submitted for U.S.E.P.A. priority pollutant volatile organic analyses at Mann Testing Laboratories. The 1987 volatile organic ground water sampling program is summarized below:

- |                       |                                                                                                                                      |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Sept. 15, 1987        | - sampled stainless steel monitors<br>23-I to 34-I plus HC15                                                                         |
| Nov. 18 & 26, 1987    | - sampled stainless steel monitors<br>23-I to 34-I plus HC15 and also<br>sampled selected PVC monitors at<br>locations 14, 15 and 16 |
| Dec. 1 & Dec. 7, 1987 | - replicate and quality assurance<br>samples collected at monitors 23-I<br>to 27-III.                                                |

The results of these sample analyses are presented in Appendix IV.

Table 3 presents a summary of selected leachate-related volatile organic concentrations present in ground water. The four volatile organic compounds listed in Table 3 (vinyl chloride, 1,1-dichloroethane, trichloroethylene and cis-1,2-dichloroethylene) were selected because (a) they occurred at concentrations of 4 ug/L or more in both the October and December 1987 leachate samples which were analyzed by Mann Testing and (b) they were also present at concentrations of 2 ug/L or higher in the last two or three samples from monitor 24-III. Monitor 24-III is a shallow monitor located about 25 m downgradient to the south of the landfill. This is most likely the centre of any leachate plume emanating from this landfill. Monitor 24-III was installed as part of the plume delineation program to assess which organic compounds in leachate are capable of migrating with the ground water flow system in the shale.

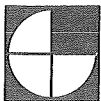


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TABLE 3 : MAXIMUM CONCENTRATIONS OF SELECTED VOLATILE ORGANIC COMPOUNDS

| COMPOUNDS                | U.S.E.P.A. DRINKING       | MONITORS |       |        |      | LEACHATE |
|--------------------------|---------------------------|----------|-------|--------|------|----------|
|                          | WATER MAXIMUM CONTAMINANT | 16-III   | 16-IV | 24-III | 28-I |          |
|                          | LEVEL                     |          |       |        |      |          |
| Vinyl Chloride           | 2                         |          |       | 12     |      | 2,010    |
| 1,1 - Dichloroethane     |                           | 4        |       | 4      |      | 3,370    |
| Trichloroethylene        | 5                         |          | 5     | 12     |      | 582      |
| Cis-1,2-Dichloroethylene |                           |          | 8     | 33     | 2    | 2,080    |

- All results in ug/L (rounded off)
- Blank spaces indicate less than 2 ug/L
- Only monitors with concentrations above 2 ug/L of the selected compounds are included in this summary table, See Appendix IV for the complete database.



The volatile organic data present in Table 3 suggest the presence of leachate at monitors 24-III and perhaps also at 16-IV. This appears reasonable since both monitors are located downgradient to the south of the landfill in areas which were predicted to be affected by leachate based on ground water flow calculations. The data presented on Table 3 also suggest that traces of leachate may also be present in monitors 28-I, located along the southeast flank of the landfill and monitor 16-III, which is a deeper monitor (9.9 m deep) located at the same location as 16-IV (6.1 m deep). Again this appears reasonable in light of our understanding of ground water flow at this site but needs to be confirmed with further monitoring.

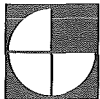
It should be noted that the sample from 16-III contained concentrations of PVC cement components (THF and 2 butanone). If these concentrations are caused by PVC cement used in monitor construction then detection of trace leachate concentrations in this monitor may be difficult.

There are no Ontario water quality objectives for the compounds listed in Table 3. However, U.S. E.P.A. drinking water maximum contaminant levels (MCLs) exist for vinyl chloride (2 ug/L) and trichloroethylene (5 ug/L).

It should be noted that vinyl chloride and cis-1,2-dichloroethylene are potential breakdown products of trichloroethylene and 1,1-dichloroethane is a potential breakdown product of 1,1,1-trichloroethane.

The complete volatile organic database for ground water and leachate includes over thirty-five compounds. The following comments provide some of the basis and rationale for excluding these other compounds from the above discussion.

Concentrations of 1,1,1-trichloroethane were found in a number of ground water samples collected in September and November 1987 but were generally not confirmed in subsequent samples collected in December 1987. This suggests that the 1,1,1-trichloroethane concentrations may be caused by contamination inadvertently introduced from the laboratory, sample bottles, sampling equipment or monitor



construction. Additional monitoring is required to further assess the significance of the 1,1,1-trichloroethane concentrations.

Four compounds; 1,2-dichloroethane, benzene, tetrachloroethylene and 1,4-dichlorobenzene, were detected in leachate but were not found at concentrations above 2 ug/L in any of the monitors tested.

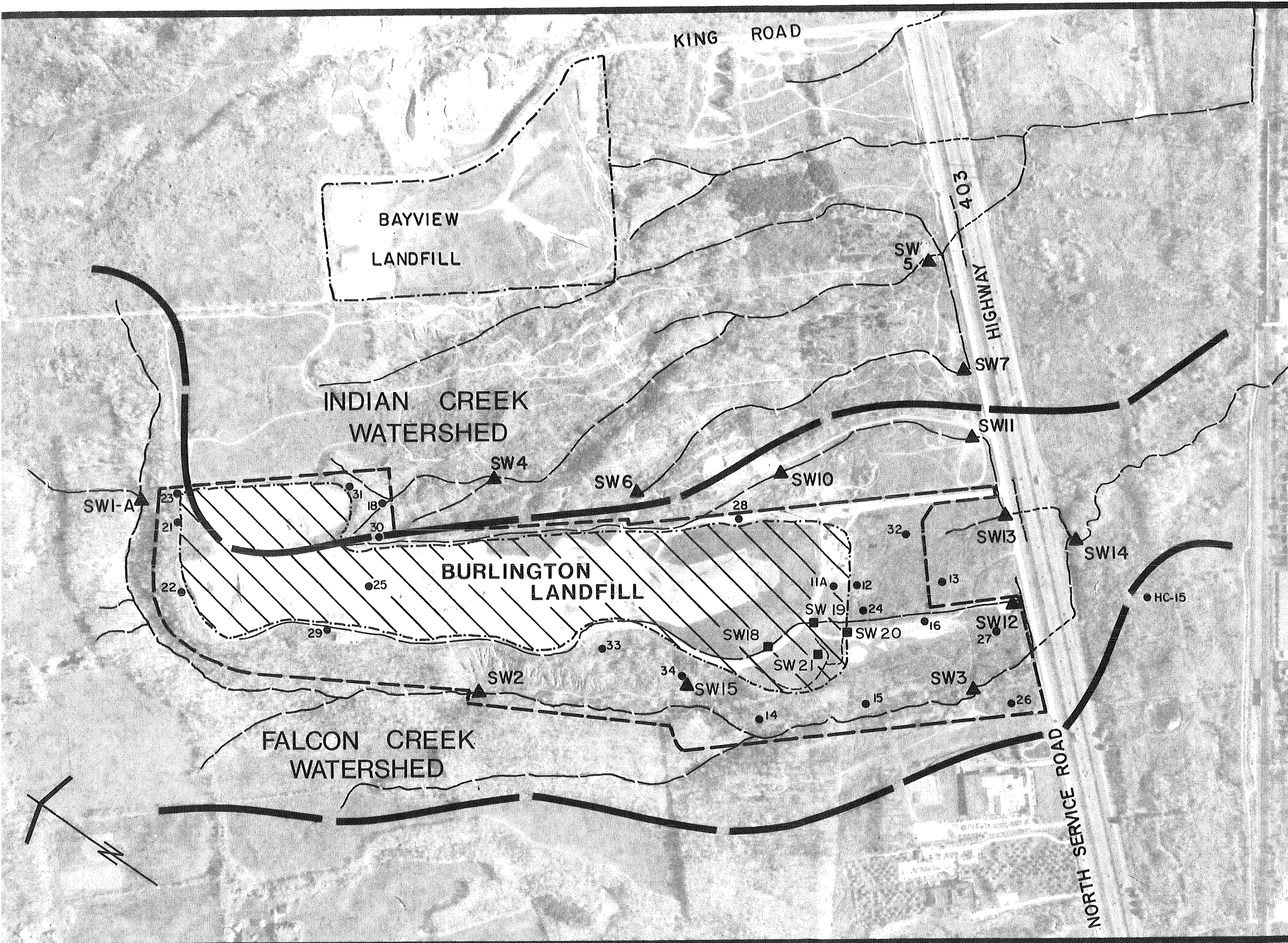
Five other compounds; dichloromethane, toluene, ethyl benzene, p & m xylene and oxylene, were detected at levels above 2 ug/L but show inconsistencies in the ground water database. For example, concentrations of all five of these compounds (ranging from 3 to 11 ug/L) were found in samples collected on November 18, 1987 from monitor 27-III using the "dedicated" Waterra pump. Samples collected at the same time from this same monitor but using different sampling techniques (peristaltic pump and bailer) did not have any concentrations of these compounds above 1 ug/L. Subsequent samples collected from monitor 27-III on December 1 and 7, 1987 using the "dedicated" Waterra pump also did not have any concentrations of these compounds above 1 ug/L.

Exclusion of a compound from the above discussion does not mean that it does not occur or cannot occur in leachate or a leachate plume. It merely implies additional monitoring data are required to assess the significance of these compounds. In particular the elevated concentration of toluene (139 ug/L) found in monitor HC15-I requires confirmation. Monitor HC-15-I is a 25.9 m deep monitor located south of Highway 403 (see Figure 7 for location).

#### 6.2.2 Inorganic and Routine Water Quality Parameters

Ground water samples were also collected in 1987 for analysis of inorganic and routine water quality parameters. The monitors were pumped out (purged) before sampling. The volumes of water purged from each monitor are presented in Appendix I.

The 1987 ground water samples were analyzed at the Halton Region laboratory for inorganic and routine water quality parameters. These results are in Appendix IV.



# Legend

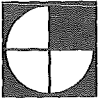
- ▲SW14 Surface Water Monitoring Station
- ~ Drainage Course (Intermittent)
- Surface Watershed Divide
- - - Property Boundary
- Loading Facility Runoff Monitoring Stations Established By The Region
- Borehole Location With Ground Water Monitors
- ▨ Refuse

## Surface Water & Ground Water Monitoring Stations

Halton Region  
 BURLINGTON  
 LANDFILL SITE

Project 87-224  
 Scale 1:8,000 (approx)



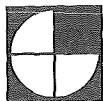


Previous ground water analyses for these parameters were carried out by the MOE laboratory.

There are discrepancies between the 1987 Halton analyses and previous analysis results completed by the MOE. In addition, quality assurance checks, suggest that the Halton Region laboratory data collected in 1987 is unsuitable for assessing leachate impacts on ground water and surface water or for assessing concentration trends with time. The reader is referred to Section 8.0 of this report for a detailed discussion of the quality assurance information.

It should be noted that in previous monitoring it has not been possible to distinguish leachate contamination from the naturally saline, poor quality ground water which is present in the shale bedrock at this site. This is particularly true at the south end of the site where the shale bedrock occurs near surface.

At the north end of the site the shale is overlain by a considerable thickness of clayey silt till. Water quality in the till is better than in the shale, particularly with respect to chloride concentrations. The 1986 monitoring report concluded that none of the monitors at the north end of the site which are screened in the till are affected by leachate. This interpretation cannot be confirmed with the 1987 data because of discrepancies in the analyses for chloride and other routine parameters.



## 7.0 SURFACE WATER

### 7.1 SURFACE WATER FLOW

The Burlington Landfill is located within two watersheds; Falcon Creek and Indian Creek. Surface water monitoring stations are located within both watersheds and are shown on Figure 7.

Two additional temporary sampling stations (SW16 and SW17) were established for control purposes on another stream far removed from any potential landfill impact. The location of these stations is shown on Figure 8. The purpose of sampling these stations is to assess the impact of Highway 403 on surface water quality so that highway impacts can be distinguished from landfill impacts.

Visual observations of flow are made at monitoring stations during sampling visits. There was generally either no flow or very low flows at the landfill monitoring stations during May, August and October, 1987. Flows were higher in December due to recent rainfalls.

As in previous monitoring, the highest flows occurred in the main channel of Falcon Creek (Stations SW1, SW2, SW3, SW14) and in the control stream near Brant Street (Stations SW16 and SW17). The remainder of the sampling stations are located in poorly defined drainage channels which generally do not flow except for brief periods during spring runoff and after long periods of wet weather.

A V-notch weir was installed on Falcon Creek at Station SW-3 in 1982. The weir specification details are presented in Appendix II. Regional staff read the staff gauge two or three times a week for the first part of 1987. These readings and corresponding, calculated flow rates are presented in Appendix II. Falcon Creek stopped flowing from July to October 1987 except during major precipitation events. No readings were taken in November and December 1987.

Figure 9 is a plot of Falcon Creek discharge at station SW3 for the period 1983 to 1987. Streamflow is intermittent and ranges from zero during dry summer weather to a

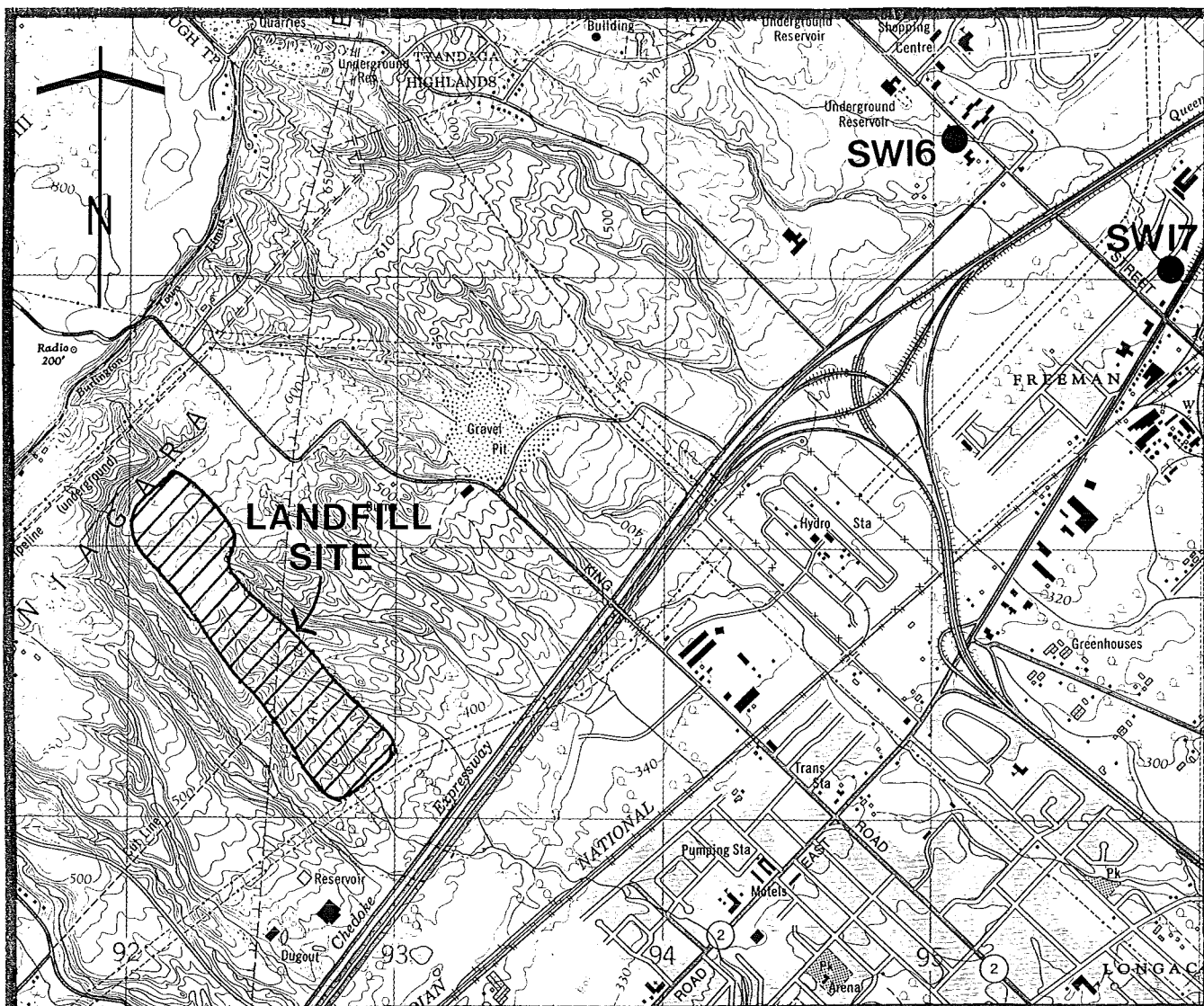


FIGURE 8

## CONTROL STATIONS FOR SURFACE WATER SAMPLING

Project 87-224

Scale 1:25,000



# STREAMFLOW AT SW3

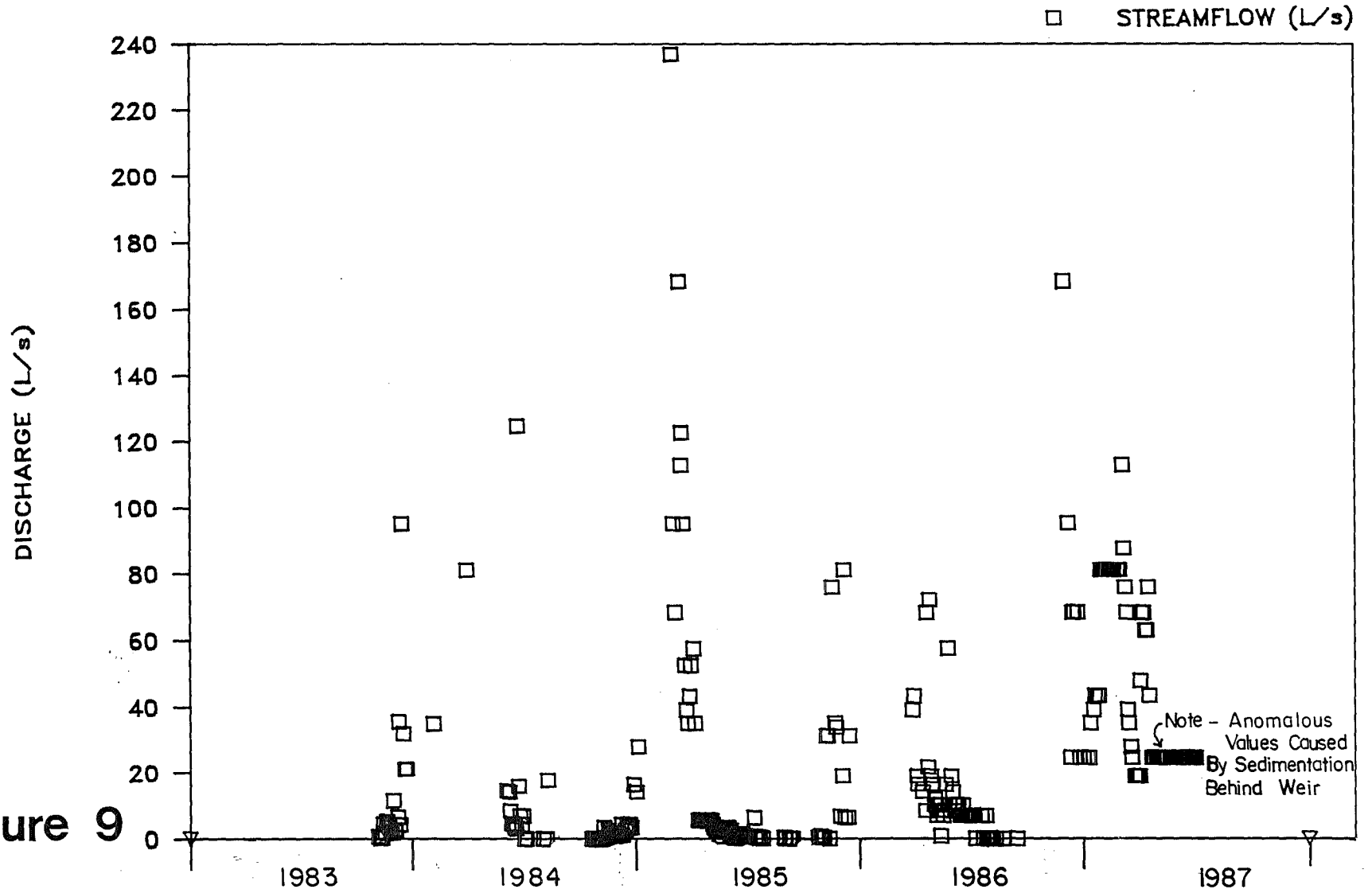
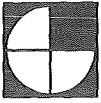


Figure 9

Falcon Creek Streamflow At SW3

GLL Project  
87-224





maximum peak flow of 236 L/s on February 25, 1985. Review of the available measurements suggest that flows in excess of 100 L/s probably occur each year for several days during spring runoff and during storms in the late fall.

Falcon Creek is either frozen or not flowing for over one third of each year. The stream is generally dry in August and September, with exceptions caused by significant rainfall events. There is essentially no ground water baseflow to the stream during the summer. Baseflow during the fall, winter and spring is estimated to be within the range of 1 to 10 L/s on average.

Daily precipitation data for 1986 from the Royal Botanical Gardens Meteorological Station are presented in Appendix II along with the Falcon Creek stream flow information. Comparison of precipitation and streamflow data suggests that streamflow responds rapidly to major storm events. Storms with more than 20 mm of precipitation generally cause significant increases in streamflow.

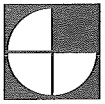
Falcon Creek carries a fairly high sediment load. Sedimentation behind the V-notch weir has caused inaccurate staff gauge measurements in the past and also in May and June, 1987.

Sufficient streamflow data has been collected since 1982 to characterize the nature of flows in Falcon Creek. There appears to be no further need for twice weekly readings of the staff gauge. Observation of streamflow will continue to be made whenever samples are collected since flow rates can cause variations in water quality.

## 7.2 SURFACE WATER QUALITY

Surface water samples were collected in May, August, October and December 1987. It was dry during the May, August and October sampling visits and therefore only a few sampling locations had sufficient flowing water to permit sampling.

The May, 1987 samples were submitted to the Ministry of Environment Laboratory for analysis. The August, October and December 1987 samples were analyzed at the Halton Region Laboratory. The results are presented in Appendix V.



Duplicate samples from station SW14 in August and October were submitted to both the MOE laboratory and the Halton Region laboratory. A comparison of these results is included in Section 8.0.

#### 7.2.1 Falcon Creek Watershed

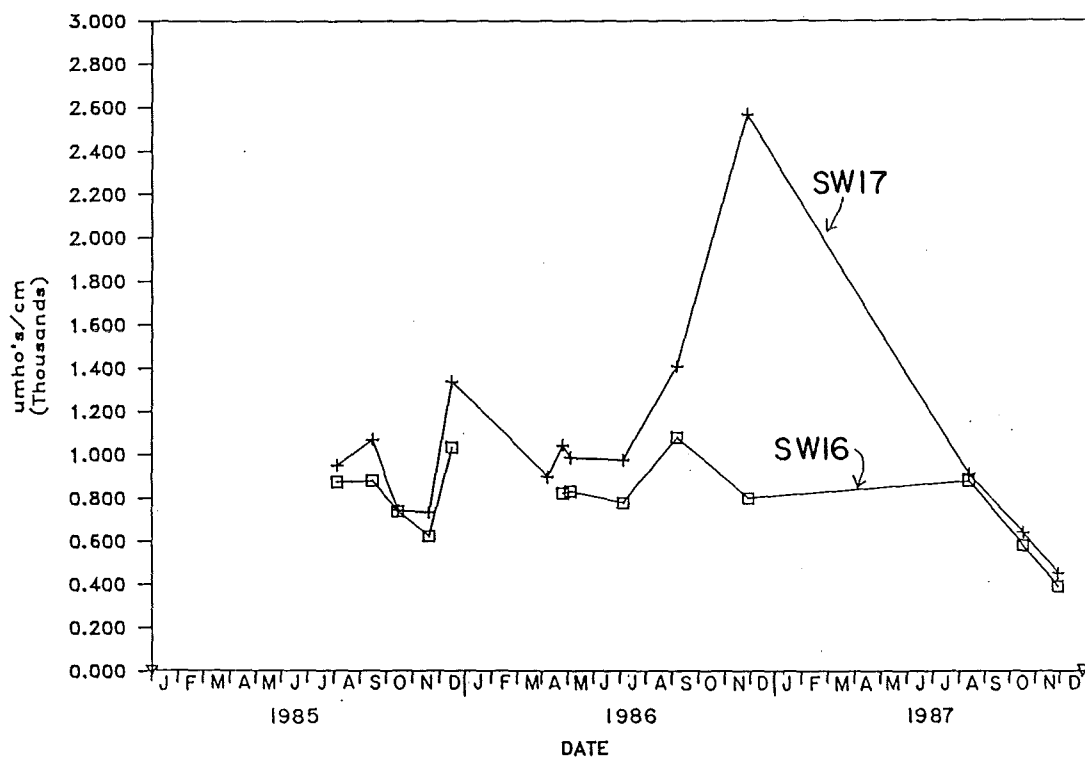
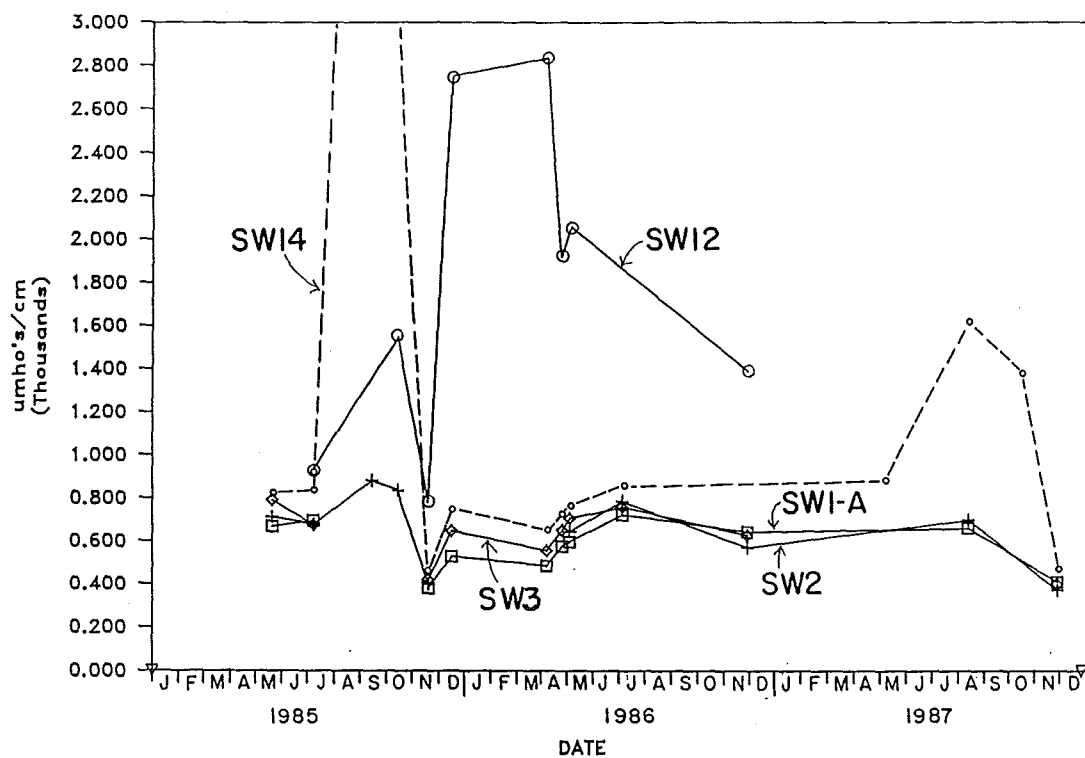
Falcon Creek water quality results are summarized in Table 4. Average annual values for selected parameters are presented for three sampling stations: SW1-A located upstream of the landfill; SW3 located downstream of the landfill and; SW14 located further downstream on the south side of Highway 403.

Review of Table 4 suggest that very little landfill impact occurs between SW1-A and SW3. Most parameters remain within the same range as the stream flows past the landfill.

Table 4 suggests that minor landfill impact may have occurred at SW14 as previously suggested in the 1985 monitoring report. In addition to potential leachate impacts, water quality at station SW14 in 1987 was probably also affected by: de-icing salt and other contaminants related to Highway 403; discharge of saline ground water; and semi-stagnant flow conditions in May, August and October 1987.

Figure 10 presents conductivity values for SW1-A, SW2 and SW3 plotted versus time. Conductivity values at all three stations are similar, again indicating that very little leachate impact occurs between SW1-A and SW3.

Figure 10 presents conductivity values for SW12 and SW14. SW12 is the outlet of the sedimentation pond which is upstream of and contributes flow to SW14. Leachate impact was noted at SW12 in 1986. Due to lack of flow, no samples were collected at SW12 in 1987. Visual observations suggest that there was less leachate impact on the sedimentation pond in 1987 than in 1986. Presumably this is due to the leachate seepage repair work carried out in the vicinity of the transfer station in July 1986. Review of Figure 10 suggests that water quality at SW12 and SW14 is variable with



## Surface Water Conductivities Versus Time

Figure 10

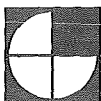
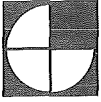


TABLE 4 : SUMMARY OF FALCON CREEK WATER QUALITY  
AVERAGE OF 1985, 1986 AND 1987 DATA

| PARAMETER          | UNITS                     | SW1-A<br>UPSTREAM OF<br>LANDFILL |      |      | SW3<br>DOWNSTREAM OF<br>LANDFILL |      |      | SW14<br>DOWNSTREAM SOUTH<br>OF 403 |      |      |
|--------------------|---------------------------|----------------------------------|------|------|----------------------------------|------|------|------------------------------------|------|------|
|                    |                           | 1985                             | 1986 | 1987 | 1985                             | 1986 | 1987 | 1985                               | 1986 | 1987 |
| NUMBER OF ANALYSES |                           | 4                                | 5    | 2    | 4                                | 5    | 1    | 6                                  | 4    | 4    |
| CONDUCTIVITY       | umho/cm                   | 569                              | 604  | 535  | 634                              | 659  | 400  | 2092                               | 752  | 1089 |
| HARDNESS           | mg/L (CaCO <sub>3</sub> ) | 261                              | 275  | 310  | 300                              | 319  | 300  | 461                                | 346  | 426  |
| ALKALINITY         | mg/L (CaCO <sub>3</sub> ) | 214                              | 233  | 226  | 246                              | 272  | 240  | 246                                | 272  | 1190 |
| CHLORIDE           | mg/L                      | 37                               | 45   | 85   | 30                               | 34   | 50   | 216                                | 59   | 238  |
| TKN                | mg/L (N)                  | 0.3                              | 0.28 | 0.15 | 0.3                              | 0.28 | <.05 | 0.5                                | 0.3  | 0.12 |
| AMMONIA            | mg/L (N)                  | <.05                             | 0.33 | <.01 | <.05                             | 0.07 | 0.01 | <.05                               | <.05 | 0.05 |
| NITRATE            | mg/L (N)                  | 0.35                             | 0.18 | 1.22 | 0.24                             | 0.16 | 0.66 | 0.16                               | 0.06 | 0.42 |
| COD                | mg/L (O)                  | 15                               | 22.4 | 54   | 24                               | 5.2  | 116  | 22.4                               | 6.0  | 51.3 |
| DOC                | mg/L (C)                  | 3.1                              | 4.3  | 6.0  | 3.9                              | 3.1  | -    | 4.4                                | 3.1  | 5.1  |
| PHENOLS            | ug/L                      | 0.5                              | 0.7  | 1.2  | 1.8                              | 0.92 | 0.9  | 2.1                                | 0.7  | 1.4  |
| FECAL COLIFORMS    | counts/100 mL             | 179                              | 87   | 302  | 179                              | 267  | 440  | 169                                | 190  | 754  |
| FECAL STREPTOCOCCI | counts/100 mL             | 92                               | 34   | 930  | 163                              | 126  | -    | 69                                 | 79   | 105  |

Note: Bacteria values are geometric  
means - not averages



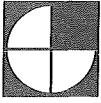
time. The highest conductivity values at SW14 generally occur during low flow periods in late summer.

Samples collected from SW14 in August and October were submitted for analysis of trace organics, in addition to the routine monitoring parameters. Both the August and October samples did not have any detectable concentrations of extractable organics, PCBs or pesticides. The October sample which was analyzed by the MOE laboratory and Mann Testing Laboratories did not have any detectable concentrations of volatile organics. The August sample which was only analyzed by the MOE had a small amount of one volatile organic compound (3 ug/L of dichloromethane). This compound was probably inadvertently introduced in the laboratory since a sample of Burlington Municipal water analyzed at the same time contained a higher concentration (4 ug/L) of dichloromethane. Dichloromethane is a solvent commonly used in laboratories for cleaning glassware.

SW15 is a seasonal seepage near the bottom of the Falcon Creek ravine located between SW1-A and SW3. One sample was collected from this station in 1987 and water quality was similar to the background station SW1-A.

Runoff from the southeast end of the landfill also discharges into Falcon Creek just upstream of SW14. Drainage from the landfill east perimeter ditch flows from station SW10 to SW11 to SW13 and then via a culvert under Highway 403 to SW14 (see Figure 7). SW10, SW11 and SW13 are dry for most of the year, except for spring runoff and during major precipitation events. As a result no samples were collected during 1987 from SW10. Samples were collected from SW11 and SW13 on one occasion in 1987. The limited monitoring data available indicates some water quality degradation in this drainage course. However, the lack of flow suggests that it has minimal impact on water quality in the main channel of Falcon Creek.

During 1985 and 1986 water samples were also collected from two control stations on a stream near Brant Street, far removed from the landfill (see Figure 8). Samples were collected upstream (SW16) and downstream (SW17) of Highway 403. Review of the SW16 and SW17 data in Appendix V and Figure 10 indicates that water quality in these control stations is similar to or worse than water quality in Falcon Creek downstream



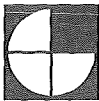
from the landfill. Test results of samples collected from stations SW16 and SW17 on December 2, 1986 during a snow storm illustrate the impact of road salting and highway runoff.

#### 7.2.2 Indian Creek Watershed

Drainage from the northeastern part of the landfill discharges into two tributary channels (SW6-SW7 and SW4-SW5) of Indian Creek as shown on Figure 7.

The SW6-SW7 channel is usually dry and no samples were collected from station SW6 or SW7 in 1987 due to lack of flowing water.

The SW4-SW5 tributary has slightly higher flows but is also usually dry. One set of samples was collected from SW4 and SW5 in 1987. Slightly elevated conductivity and nitrate values were found at SW4 in December 1987. Above background levels of nitrate and phenols were found at SW5 on the same date. Additional monitoring results are required to determine whether these results are related to the landfill.



## 8.0 DISCUSSION OF QUALITY ASSURANCE ASPECTS

In any monitoring program there is always a concern about the accuracy of the data collected. In the 1987 Burlington Landfill monitoring program this was a major concern because of a change in laboratories during the year. A number of quality assurance checks were carried out in 1987 in order to assess how this change in laboratories affected the monitoring database.

The following discussion outlines the quality assurance methods and results completed in 1987. It should be noted that there may be real differences between analytical methods used in different laboratories. Therefore inconsistencies between results from two different laboratories do not necessarily imply that an error has occurred in either laboratory. However, such inconsistencies must be identified and if possible quantified otherwise trend analysis of existing and future monitoring results will be difficult, potentially misleading or in some cases impossible.

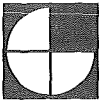
### 8.1 TRACE ORGANIC ANALYSES

Trace organic analyses of ground water and leachate were carried out by the MOE laboratory until mid-1987. Subsequently trace organic analyses were carried out by Mann Testing Laboratories. This change in laboratories was made in response to a change in MOE policy whereby samples from routine monitoring program such as this one are no longer accepted for analysis at the MOE laboratory.

#### 8.1.1 Leachate

A leachate sample collected on October 20, 1987 was split and submitted to both the MOE and Mann Testing laboratories for analysis of volatile organics, PCB and pesticides. These results are presented in Appendix III.

All but one of the volatile compounds detected in the MOE analysis were detected in the Mann analysis. Seven additional compounds were detected in the Mann analysis. The concentrations reported by Mann are generally one or two orders of magnitude higher than the MOE results and thus are not suitable for analyzing trends in conjunction with the previous MOE results.



*geometric mean*

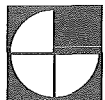
The volatile organic samples for the MOE were collected and placed in 250 mL glass bottles with foil lined plastic caps in accordance with the standard MOE procedure. The bottles are filled to the top with no head space. The MOE must remove the cap in the laboratory prior to analysis using dual column gas chromatography (MOE Test Code PLOPUP). It would appear that losses of volatile compounds occur either during sample transportation, storage, or analysis. The MOE volatile results should be considered minimum values.

The volatile organic samples for Mann are collected in the same manner but are placed in vials with Teflon lined septum caps. The vials are filled to the top with no head space. The samples are analyzed using purge and trap, gas chromatography - mass spectroscopy (GC-MS) techniques in accordance with standard U.S.E.P.A. methods. The higher concentrations detected by Mann are probably more representative of the true volatile organic concentrations in leachate.

The October 20, 1987 leachate sample was also analyzed by both laboratories for PCB's and pesticides. Nineteen pesticides were detected by the MOE and none were detected by Mann. This is partly because the Mann detection limit is higher than the MOE. However, the MOE concentrations in most cases are high enough that Mann would have detected them. Interestingly, the Mann October 20, 1987 pesticides results are actually closer to the range of previous monitoring results completed by the MOE. The October 20, 1987 MOE pesticide concentrations appear anomalously high and need to be confirmed by additional monitoring.

#### 8.1.2 Ground Water

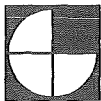
Volatile organic compounds were previously recommended as ground water leachate indicator parameters at this site. As discussed above, the more recent analysis results provided by Mann are generally higher in concentration and are probably more representative of actual ground water conditions than previous MOE analyses. The following quality assurance checks were carried out as part of the 1987 ground water monitoring for volatile organic compounds.



- (a) Travelling blanks were submitted to assess potential contamination introduced from sample bottles or sample handling
- (b) "Blind" (labelled as false monitors, e.g., BH101) blank samples of Burlington municipal water and distilled water were submitted to the laboratory without their knowledge, to test for any inadvertent introduction of contamination during sample storage or analysis.
- (c) Every fifteenth sample submitted to the laboratory was analyzed twice to assess repeatability (e.g., 16-I and 16-III November 26). This is a standard laboratory procedure for Mann.
- (d) A "blind" duplicate sample (27-I November 18) was submitted without the laboratory's knowledge to test analytical repeatability.
- (e) Three "blind" replicate samples were submitted from the same well on the same date (27-III November 18). These samples were collected using three different methods; Waterra pump, bailer and peristaltic pump, in order to assess sampling techniques
- (f) In addition three replicate samples were collected one week apart from twelve monitors in order to assess temporal variations in volatile organic concentrations and the overall repeatability of the combined sampling and analytical process.

Review of the ground water volatile organic analysis results including the quality assurance data suggests that the Mann results are generally within acceptable analytical error for these parameters ( $\pm 15\%$ ). However, some of the initial samples collected in September and November 1987 appear to be slightly affected by contamination inadvertently introduced during monitor installation or from sampling equipment.

For instance, the sample collected with a Waterra pump on November 18 from Monitor 27-III had detectable concentrations of six volatile compounds. Samples collected on



the same day using different methods (bailer and peristaltic pump) did not have detectable concentrations of these compounds. Initially, this suggests that losses of volatile compounds may occur using these other sampling techniques. However, subsequent samples collected on December 1 and 7 using the Waterra pump also did not detect these compounds. This suggests that the concentrations detected earlier were inadvertently introduced during monitor installation, sampling or from the sample bottle.

## 8.2 INORGANIC AND ROUTINE WATER QUALITY ANALYSES

Inorganic and routine water quality analyses were carried out by the MOE laboratory until mid-1987. Subsequently, these analyses have been carried out by the Halton Region Laboratory. This change in laboratories was made in response to a change in MOE policy for accepting samples for analysis, as discussed above.

In 1987, a quality assurance program was instituted in order to assess the accuracy and repeatability of inorganic and routine water quality analyses. The main components of this program were as follows:

- (a) duplicate samples were submitted to the Halton laboratory and the MOE laboratory on two occasions for interlaboratory comparison,
- (b) "blind" samples of Burlington municipal water were submitted for analysis along with other samples on five occasions,
- (c) recent analyses of ground water and surface water completed by the Halton Laboratory were compiled with historical results from the MOE laboratory. Concentration trends over time were reviewed with respect to consistency,
- (d) replicate ground water samples were collected on three dates, one week apart and analyzed for phenols to assess the repeatability for this parameter.

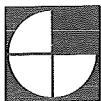


Table 5 presents the interlaboratory comparison results and the test results of "blind" Burlington municipal water samples. The following observations were made based on the information presented in Table 5.

- (a) Halton conductivity values are consistently lower than the MOE values but are within the same range. The repeatability of the Halton conductivity values appears reasonable based on the municipal water results.
- (b) Halton values for hardness, total phosphorus, pH, nitrite, iron, copper, lead, nickel, manganese and chromium appear reasonable and generally correlate adequately with the MOE results,
- (c) Halton values for alkalinity, suspended solids, chlorides, TKN, ammonia, nitrate, BOD, COD, phenols, aluminum and zinc display significant variation from previous data which render these analyses unsuitable for interpreting leachate impacts.

Review of ground water and surface water quality trends over time (see Appendices IV and V for data) tends to confirm the above discrepancies between the recent Halton Laboratory analyses and previous analyses completed by the MOE. Analyses of key leachate indicator parameters such as chloride, phenols, ammonia, TKN, BOD and COD are suspect. Some of these discrepancies may be related to the amount of suspended sediment in the sample and whether the laboratory shakes up the sample before analysis or only analyzes the supernatant fluid.

In summary, the 1987 inorganic and routine water quality data are not suitable for confidently drawing any conclusions about leachate impacts or for assessing concentration trends with time.

Phenol was recommended as a potential leachate indicator parameter in previous monitoring reports. In order to assess the reliability and repeatability of phenol

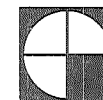
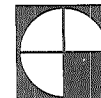


TABLE 5 - INTERLABORATORY COMPARISON AND "BLIND" BLANK QUALITY ASSURANCE DATA

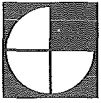
| PARAMETERS              |            | SURFACE WATER -14 |        |           |        | LEACHATE  |        |           |        | BURLINGTON MUNICIPAL WATER |           |           |          |          |        |
|-------------------------|------------|-------------------|--------|-----------|--------|-----------|--------|-----------|--------|----------------------------|-----------|-----------|----------|----------|--------|
|                         |            | 18-AUG-87         |        | 20-OCT-87 |        | 18-AUG-87 |        | 20-OCT-87 |        | 18-AUG-87                  | 20-OCT-87 | 18-NOV-87 | 1-DEC-87 | 7-DEC-87 |        |
|                         |            | MOE               | HALTON | MOE       | HALTON | MOE       | HALTON | MOE       | HALTON | MOE                        | HALTON    | HALTON    | HALTON   | HALTON   | HALTON |
| CONDUCTIVITY            | umho'c/cm: | 1830              | 1620   | 2070      | 1380   | 7650      | 6520   | 9850      | 6500   | 390                        | 250       | 210       | 220      | 260      |        |
| HARDNESS                | mg/L       | 569               | 487    | 628       | 774    | 3180      | 2760   | 3710      | >1000  | 130                        | 137       | 199       | 136      | 126      |        |
| ALKALINITY              | mg/L       | 288               | 121    | 434       | 4120   | 3256      | 2359   | 3622      | 4330   | 132                        | 113       | 1120      | 109      | 102      |        |
| pH                      | mg/L       | 7.6               | 8.6    | 7.7       | 8.0    | 6.5       | 7.6    | 7.0       | 7.1    | 7.6                        | 8.6       | 7.9       | 8.1      | 8.1      |        |
| CHLORIDE                | mg/L       | 384               | 382    | 363       | 445    | 994       | 53     | 49        | 1320   | 26                         | 43        | 190       | 26       | 29       |        |
| SUSPENDED SOLIDS (RSP)  | mg/L       | 124               | 41     | 35        | 4      | 563       | 100    | 8130      | 700    | 2.1                        | 1         | <1        |          | <1       |        |
| PHOSPHOROUS (TOTAL)     | mg/L       | <.01              | <.02   | 0.05      | 0.03   | 0.80      | 0.85   | 1.05      | 0.51   | <.01                       | <.02      | <.02      |          | <.02     |        |
| KJELDAHL NITROGEN (TKN) | mg/L       | 0.4               | 0.3    | 0.3       | 0.1    | 229.0     | 13.3   | 297.0     | 176.0  | 1.0                        | <.1       | 0.3       | 0.3      | <.1      |        |
| AMMONIUM (NH3)          | mg/L       | 0.20              | 6.22   | 0.15      | <.01   | 198.00    | 155.00 | 280.00    | 280.00 | 0.20                       | <.01      | <.01      | (14.96)  | <.01     |        |
| NITRATES                | mg/L       | 0.10              | 0.24   | <.05      | 0.77   | 0.70      | 0.32   | 0.55      | 13.90  | 0.30                       | 0.56      | 0.83      |          | 1.48     |        |
| NITRITE                 | mg/L       | <.005             | <.02   | <.005     | <.02   | 0.12      | 0.04   | 0.10      | <.02   | <.01                       | <.02      | <.02      |          | <.02     |        |
| PHENOLICS               | ug/L       | <.2               | 3      | <.2       | 31     | 1540      | 355    |           | 102    | <1                         | <1        | 59        | 1        | 4        | 4      |
| BOD5                    | mg/L       | 2                 | 10     | 16        | <1     | 1500      | 412    | 6000      | 406    | <1                         | <1        | <1        | <1       | <1       |        |
| COD                     | mg/L       | 16                | 29     | 8         | 153    | 4830      | 4949   | 5376      | 8601   | 6                          | <10       | 70        | 28       | 10       |        |



BURLINGTON LANDFILL SITE  
PROJECT 87-224

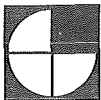
TABLE 5 - INTERLABORATORY COMPARISON AND "BLIND" BLANK QUALITY ASSURANCE DATA

|            |      | SURFACE WATER -14 |        |           |        | LEACHATE  |        |           |        | BURLINGTON MUNICIPAL WATER |           |           |          |          |        |
|------------|------|-------------------|--------|-----------|--------|-----------|--------|-----------|--------|----------------------------|-----------|-----------|----------|----------|--------|
|            |      | 18-AUG-87         |        | 20-OCT-87 |        | 18-AUG-87 |        | 20-OCT-87 |        | 18-AUG-87                  | 20-OCT-87 | 18-NOV-87 | 1-DEC-87 | 7-DEC-87 |        |
| PARAMETERS |      | MOE               | HALTON | MOE       | HALTON | MOE       | HALTON | MOE       | HALTON | MOE                        | HALTON    | HALTON    | HALTON   | HALTON   | HALTON |
| DOC        | mg/L | 7                 | 7      | 3         |        | 1480      | 437    | 2500      |        | 2                          | 5         |           |          |          |        |
| DIC        | mg/L | 58                | 55     | 85        |        | 495       | 94     | 540       |        | 20                         | 24        |           |          |          |        |
| IRON       | mg/L | 0.34              | <.40   | 0.42      | 0.20   | 23.90     | 87.00  | 243.00    | 410.00 | 0.04                       | <.4       | <.08      |          | <.08     |        |
| COPPER     | mg/L | <.005             |        | <.005     |        | <.005     | <.3    | 0.17      | 0.40   | <.01                       | <.3       | <.06      |          |          |        |
| NICKEL     | mg/L | 0.01              |        | 0.01      |        | 0.09      | <.6    | 0.16      | 0.16   | <.01                       | <.6       | <.12      |          |          |        |
| LEAD       | mg/L | <.015             |        | <.015     |        | 0.07      | <1     | 0.49      | 0.80   | <.01                       | <1        | <.2       |          |          |        |
| ZINC       | mg/L | <.010             |        | <.01      |        | 1.70      | 5.30   | 12.00     | 22.00  | <.01                       | 2.40      | 0.06      |          |          |        |
| MANGANESE  | mg/L | 0.31              |        | 1.20      |        | 5.90      | 7.20   | 9.80      |        | <.01                       | <.2       |           |          |          |        |
| ALUMINUM   | mg/L | 0.31              |        | <.015     |        | 0.96      | 0.40   | 7.60      | 70.00  | 0.12                       | <4        | <4        |          |          |        |
| CADMIUM    | mg/L | <.002             |        | <.0015    |        | 0.01      | <.1    | 0.03      | 0.10   | <.01                       | <.1       | <.02      |          |          |        |
| CHROMIUM   | mg/L | 0.01              |        | 0.02      |        | 0.39      | <.6    | 0.76      | 0.60   | <.01                       | <.6       | <.2       |          |          |        |



concentrations replicate ground water samples were collected on three dates, one week apart and analyzed for phenols. These results are presented on Table 6.

Theoretically, variations in phenol concentrations in these samples could be due to a variety of factors including; natural temporal variations, variations caused by sampling techniques or variations caused laboratory analysis. However, review of the blank sample results of Burlington Municipal water and distilled water indicates a problem with the laboratory analyses. Consequently, natural temporal variations and sampling-related variations in phenol concentrations cannot be assessed using these data.



BURLINGTON LANDFILL PROJECT 87-224  
TABLE 6 - Phenol Concentrations in Ground  
Water - Replicate Quality Assurance Data

Results in ug/L  
Analysis by Halton Region Laboratory  
unless otherwise noted

| SAMPLE                     | DATE      | PHENOL              |
|----------------------------|-----------|---------------------|
| 23-I                       | 26-NOV-87 | 2.3                 |
|                            | 01-DEC-87 | 0.9                 |
|                            | 07-DEC-87 | 6.5                 |
| 23-II                      | 26-NOV-87 | 1.8                 |
|                            | 01-DEC-87 | 1.4                 |
|                            | 07-DEC-87 | 5.7                 |
| 23-III                     | 26-NOV-87 | 2.3                 |
|                            | 01-DEC-87 | <0.05               |
|                            | 07-DEC-87 | 2.3                 |
| 24-I                       | 26-NOV-87 | 2.5                 |
|                            | 01-DEC-87 | <0.05               |
|                            | 07-DEC-87 | 4.0                 |
| 24-II                      | 26-NOV-87 | 0.1                 |
|                            | 01-DEC-87 | <0.05               |
|                            | 07-DEC-87 | 2.7                 |
| 24-III                     | 26-NOV-87 | 3.0                 |
|                            | 01-DEC-87 | <0.5                |
|                            | 07-DEC-87 | 1.7                 |
| 26-I                       | 26-NOV-87 | <0.05               |
|                            | 01-DEC-87 | <0.5                |
|                            | 07-DEC-87 | 2.0                 |
| 26-II                      | 26-NOV-87 | 0.8                 |
|                            | 01-DEC-87 | <0.5                |
|                            | 07-DEC-87 | 1.8                 |
| 26-III                     | 26-NOV-87 | 1.9                 |
|                            | 01-DEC-87 | 1.2                 |
|                            | 07-DEC-87 | 2.3                 |
| 27-I                       | 26-NOV-87 | 2.7                 |
|                            | 26-NOV-87 | 1.0 BLIND DUPLICATE |
|                            | 01-DEC-87 | <0.5                |
| 27-II                      | 07-DEC-87 | 4.6                 |
|                            | 26-NOV-87 | 1.9                 |
|                            | 01-DEC-87 | <0.5                |
| 27-III                     | 07-DEC-87 | 2.3                 |
|                            | 26-NOV-87 | 6.0                 |
|                            | 26-NOV-87 | 2.5 BLIND DUPLICATE |
| 27-III                     | 01-DEC-87 | <0.5                |
|                            | 07-DEC-87 | 1.5                 |
| Distilled Water            | 26-NOV-87 | 5.0                 |
| Burlington Municipal Water | 12-MAY-87 | 0.2 *               |
|                            | 18-AUG-87 | <0.5                |
|                            | 18-AUG-87 | <0.6 * MOE LAB      |
|                            | 20-OCT-87 | <0.2 MOE LAB        |
|                            | 20-OCT-87 | 59.4                |
|                            | 26-NOV-87 | 1.2                 |
|                            | 01-DEC-87 | 4.0                 |
|                            | 07-DEC-87 | 3.6                 |

\* = TENTATIVE DATA



## **9.0 SELECTED REFERENCES**

Gartner Lee Limited

1987: Halton Regional Landfill - Burlington 1986 Monitoring report. GLL 86-53

1986: Burlington Regional Landfill Plume Delineation Report. GLL 85-61

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GLL 84-101

1984a: Burlington Landfill - 1983 Monitoring Report.  
GLL 84-2

1984b: Hydrogeological Study, Burlington Landfill Continued Use. GLL 83-66

1983: Burlington Landfill - 1982 Monitoring Report.  
GLL 82-71

1982: Burlington Landfill - 1981 Monitoring Report.  
GLL 80-96

1981: Burlington Landfill site, (1980) Monitoring Program - Interim Report. GLL 80-96

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1979: Burlington Landfill Site, Hydrogeological Study.  
GLL 78-92

Trow Hydrology Consultants Limited

1986: Halton Region Landfill Technical Report, Site F - Burlington



**APPENDIX I**

BOREHOLE LOGS  
GROUND WATER MONITOR DETAILS  
GROUND WATER LEVELS  
WELL DEVELOPMENT AND PURGING NOTES  
SLUG TEST ANALYSES

**PROJECT NAME** BURLINGTON LANDFILL

CLIENT THE REGIONAL MUNICIPALITY OF HALTON

GEOLOGIST DCF

PROJECT NO. 87-224

ELEVATION 122.65

**Gartner Lee Limited**



PROJECT NO. 87-224  
BURLINGTON LANDFILL

## MONITOR DETAILS SUMMARY

| BOREHOLE             | MONITOR |      |                  |                 |                         | SCREENED                          |      | FILTER                        |      | SEAL                  |      | BACKFILL              |  |
|----------------------|---------|------|------------------|-----------------|-------------------------|-----------------------------------|------|-------------------------------|------|-----------------------|------|-----------------------|--|
| No. Diameter<br>(mm) | No.     | Type | Diameter<br>(mm) | Stick-up<br>(m) | Elevation<br>(t.o.p.m.) | INTERVAL<br>from grade<br>(m) (m) |      | PACK<br>from grade<br>(m) (m) |      | from grade<br>(m) (m) |      | from grade<br>(m) (m) |  |
| 11A*                 | I*      | P    | 31               | 0.77            | 134.97                  | 12.6                              | 13.1 | 12.0                          | 13.1 | 11.0                  | 12.0 |                       |  |
|                      | II      | S    | 31               | 0.94            | 135.14                  | 2.0                               | 6.1  | 1.4                           | 6.1  | 5.0                   | 6.1  |                       |  |
|                      |         |      |                  |                 |                         |                                   |      |                               |      | 0.0                   | 1.2  |                       |  |
| 12                   | I       | P    | 32               | 0.5             | 127.9                   | 12.2                              | 12.7 | 12.0                          | 12.7 | 11.0                  | 12.0 |                       |  |
|                      | II      | P    | 32               | 0.3             | 127.7                   | 7.0                               | 7.3  | 7.0                           | 7.3  | 6.0                   | 7.0  |                       |  |
|                      | III     | S    | 19               | 0.5             | 127.9                   | 1.1                               | 2.5  | 1.1                           | 2.5  | 0.0                   | 1.1  |                       |  |
| 13                   | I       | P    | 19               | 0.6             | 122.6                   | 9.3                               | 9.8  | 9.1                           | 9.8  | 8.0                   | 9.1  |                       |  |
|                      | II      | S    | 19               | 0.6             | 122.6                   | 3.0                               | 6.1  | 3.0                           | 6.1  | 2.5                   | 3.0  |                       |  |
|                      |         |      |                  |                 |                         |                                   |      |                               |      | 0.0                   | 1.4  |                       |  |
| 14                   | I       | P    | 31               | 0.46            | 125.73                  | 10.5                              | 11.0 | 9.9                           | 11.0 | 8.9                   | 9.9  |                       |  |
|                      | II      | S    | 31               | 0.47            | 125.74                  | 1.1                               | 6.1  | 1.1                           | 6.1  | 6.1                   | 7.6  |                       |  |
|                      |         |      |                  |                 |                         |                                   |      |                               |      | 0.0                   | 1.1  |                       |  |
| 15                   | I       | P    | 31               | 0.39            | 121.39                  | 10.4                              | 10.9 | 9.9                           | 10.9 | 8.9                   | 9.9  |                       |  |
|                      | II      | S    | 31               | 0.81            | 121.81                  | 1.4                               | 6.1  | 1.4                           | 6.1  | 6.1                   | 7.6  |                       |  |
|                      |         |      |                  |                 |                         |                                   |      |                               |      | 0.0                   | 1.4  |                       |  |
| 16                   | I       | P    | 31               | 0.51            | 123.61                  | 28.4                              | 28.9 | 27.0                          | 28.9 | 26.0                  | 27.0 |                       |  |
|                      | II      | P    | 31               | 0.93            | 124.03                  | 17.2                              | 17.7 | 16.2                          | 17.7 | 17.7                  | 18.2 |                       |  |
|                      |         |      |                  |                 |                         |                                   |      |                               |      | 15.2                  | 16.2 |                       |  |
|                      | III     | P    | 31               | 0.92            | 123.92                  | 9.4                               | 9.9  | 8.8                           | 9.9  | 7.8                   | 8.8  |                       |  |
|                      | IV      | S    | 31               | 0.91            | 123.91                  | 1.5                               | 6.1  | 1.5                           | 6.1  | 6.1                   | 6.5  |                       |  |
|                      |         |      |                  |                 |                         |                                   |      |                               |      | 0.0                   | 1.5  |                       |  |
| 18                   | II      | P    | 31               | 0.70            | 157.75 +/-              | 10.7                              | 11.2 | 10.0                          | 11.2 | 5.7                   | 6.7  |                       |  |
|                      | III     | S    | 31               | 1.40            | 157.75 +/-              | 0.9                               | 6.7  | 0.9                           | 6.7  | 0.0                   | 0.9  |                       |  |
| 21*                  | I       | P    | 31               | 0.64            | 185.09                  | 18.0                              | 18.5 | 17.6                          | 18.5 | 16.6                  | 17.6 |                       |  |
|                      | II      | P    | 31               | 0.58            | 185.03                  | 14.3                              | 14.8 | 13.8                          | 14.8 | 12.8                  | 13.8 |                       |  |
|                      | III     | S    | 31               | 0.85            | 185.30                  | 0.8                               | 9.6  | 0.8                           | 9.6  | 0.0                   | 0.8  |                       |  |
| 22*                  | I       | P    | 31               | 0.98            | 183.26                  | 16.2                              | 16.7 | 15.8                          | 16.7 | 14.8                  | 15.8 |                       |  |
|                      | II      | P    | 31               | 0.56            | 182.84                  | 11.3                              | 11.8 | 10.8                          | 11.8 | 9.8                   | 10.8 |                       |  |
|                      | III     | S    | 31               | 0.65            | 182.93                  | 1.0                               | 7.2  | 0.5                           | 7.2  | 0.0                   | 0.5  |                       |  |

P - Piezometer

S - Standpipe

G - Gas Monitor

(t.o.p.m.) - Top of Pipe in Metres

\* 11A-I Repaired and elevation recalculated Jan 26, 1988

\* Resurveyed 11A, 21 and 22 June, 1987

PROJECT NO. 87-224  
BURLINGTON LANDFILL

## MONITOR DETAILS SUMMARY

| BOREHOLE             | MONITOR |      |                  |                 |                         | SCREENED<br>INTERVAL |      | FILTER<br>PACK    |      | SEAL              |      | BACKFILL          |      |
|----------------------|---------|------|------------------|-----------------|-------------------------|----------------------|------|-------------------|------|-------------------|------|-------------------|------|
| NO. Diameter<br>(mm) | No.     | Type | Diameter<br>(mm) | Stick-up<br>(m) | Elevation<br>(t.o.p.m.) | from grade<br>(m)    | (m)  | from grade<br>(m) | (m)  | from grade<br>(m) | (m)  | from grade<br>(m) | (m)  |
| 23                   | I       | P    | 51               | 0.83            | 185.77                  | 17.6                 | 18.2 | 16.7              | 18.2 | 0.0               | 16.7 |                   |      |
|                      | II      | P    | 51               | 0.61            | 185.54                  | 11.7                 | 12.3 | 11.1              | 12.3 | 0.0               | 11.1 |                   |      |
|                      | III     | S    | 51               | 0.61            | 185.6                   | 6.4                  | 7.6  | 1.5               | 7.6  | 0.0               | 1.5  |                   |      |
| 24                   | I       | P    | 51               | 0.6             | 127.96                  | 17.7                 | 18.3 | 17.1              | 18.3 | 0                 | 17.1 |                   |      |
|                      | II      | P    | 51               | 0.61            | 128.1                   | 11.8                 | 12.4 | 11.2              | 12.4 | 0                 | 11.2 |                   |      |
|                      | III     | S    | 51               | 0.67            | 128.16                  | 5                    | 6.2  | 2.1               | 6.2  | 0                 | 2.1  |                   |      |
| 25                   | I       | S    | 51               | 0.61            | 183.29                  | 17.4                 | 18.6 | 12.5              | 18.6 | 1.5               | 12.5 |                   |      |
| 26                   | I       | P    | 51               | 0.61            | 120.46                  | 17.9                 | 18.5 | 17.3              | 18.5 | 0                 | 17.3 |                   |      |
|                      | II      | P    | 51               | 0.61            | 120.51                  | 11.8                 | 12.4 | 11.2              | 12.4 | 0                 | 11.2 |                   |      |
|                      | III     | S    | 51               | 0.61            | 120.44                  | 5                    | 6.2  | 0.9               | 6.2  | 0                 | 0.9  |                   |      |
| 27                   | I       | P    | 51               | 0.61            | 116.31                  | 17.9                 | 18.5 | 17.3              | 18.5 | 0                 | 17.3 |                   |      |
|                      | II      | P    | 51               | 0.61            | 116.36                  | 11.8                 | 12.4 | 11.2              | 12.4 | 0                 | 11.2 |                   |      |
|                      | III     | S    | 51               | 0.61            | 116.35                  | 4.9                  | 6.1  | 1.5               | 6.1  | 0                 | 1.5  |                   |      |
| 28                   | I       | S    | 51               | 0.3             | 134.48                  | 5.8                  | 7    | 1                 | 7    | 0                 | 1    |                   |      |
| 29                   | I       | S    | 51               | 0.32            | 174.41                  | 7.6                  | 8.8  | 0.6               | 8.8  | 0                 | 0.6  |                   |      |
| 30                   | I       | S    | 51               | 0.6             | 170.75                  | 7.8                  | 9    | 0.6               | 9    | 0                 | 0.6  |                   |      |
| 31                   | I       | S    | 51               | 0.46            | 173.1                   | 6.9                  | 8.1  | 1                 | 8.1  | 0                 | 1    |                   |      |
| 32                   | I       | P    | 51               | 0.36            | 122.9                   | 17.6                 | 18.2 | 14.6              | 19.8 | 13.3              | 14.6 | 0.3               | 13.3 |
|                      | II      | P    | 51               | 0.61            | 123.16                  | 11.3                 | 11.9 | 8.4               | 12.2 | 7.2               | 8.4  | 1.5               | 7.2  |
|                      | III     | S    | 51               | 0.64            | 123.29                  | 5.5                  | 6.1  | 1.5               | 5.5  | 0.6               | 1.5  | 0                 | 0.6  |
| 33                   | I       | S    | 51               | 0.47            | 143.8                   | 4                    | 4.6  | 1.5               | 5.2  | 0.9               | 1.5  | 0                 | 0.9  |
| 34                   | I       | S    | 51               | 0.44            | 129.12                  | 4                    | 4.6  | 1.5               | 5.2  | 0.9               | 1.5  | 0                 | 0.9  |

P - Piezometer

S - Standpipe

G - Gas Monitor

(t.o.p.m.) - Top of Pipe in Metres

\* 11A-I Repaired and elevation recalculated Jan 26, 1988

\* Resurveyed 11A, 21 and 22 June, 1987

PROJECT NO. 87-224  
BURLINGTON LANDFILL

## GROUND WATER LEVELS

| =====   |     |         |        |            |       |            |        |            |       |            |           |            |           |        |
|---------|-----|---------|--------|------------|-------|------------|--------|------------|-------|------------|-----------|------------|-----------|--------|
| MONITOR |     |         |        | Oct. 25/85 |       | Feb. 17/86 |        | July 16/86 |       | Aug. 29/87 |           | Nov. 17/87 |           |        |
| B.H.    | No. | TOP OF  | Type   | DEPTH      | ELEV. | DEPTH      | ELEV.  | DEPTH      | ELEV. | DEPTH      | ELEV.     | DEPTH      | ELEV.     |        |
| NO.     |     | MONITOR |        | B.T.O.P.   |       | B.T.O.P.   |        | B.T.O.P.   |       | B.T.O.P.   |           | B.T.O.P.   |           |        |
|         |     | ELEV.   |        | (m)        | (m)   | (m)        | (m)    | (m)        | (m)   | (m)        | (m)       | (m)        | (m)       |        |
| -----   |     |         |        |            |       |            |        |            |       |            |           |            |           |        |
| 11A     | *   | I       | 134.97 | P          | 8.72  |            |        |            |       |            |           | 8.98       | 125.99    |        |
|         |     | II      | 135.14 | S          | 2.84  |            |        |            |       |            |           | 5.00       | 130.14    |        |
| 12      |     | I       | 127.90 | P          | 7.35  | 120.55     | 6.18   | 121.72     | 6.56  | 121.34     | 6.90      | 121.00     | 7.20      | 120.70 |
|         |     | II      | 127.70 | P          | 4.40  | 123.30     | 2.41   | 125.29     | 3.44  | 124.26     | 3.64      | 124.06     | 4.02      | 123.68 |
|         |     | III     | 127.90 | S          | dry   | -----      | 1.08   | 126.82     | 2.32  | 125.58     | 2.19      | 125.71     | dry       | -----  |
| 13      |     | I       | 122.60 | P          | 5.00  | 117.60     | 3.55   | 119.05     | 4.42  | 118.18     | 4.71      | 117.89     | 4.14      | 118.46 |
|         |     | II      | 122.60 | S          | 3.95  | 118.65     | 2.59   | 120.01     | 3.30  | 119.30     | 3.75      | 118.85     | 3.84      | 118.76 |
| 14      |     | I       | 125.73 | P          | 1.78  | 123.95     | 1.46   | 124.27     | 1.52  | 124.21     | 1.82      | 123.91     | 1.76      | 123.97 |
|         |     | II      | 125.74 | S          | 1.35  | 124.39     | 0.86   | 124.88     | 1.08  | 124.66     | 1.45      | 124.29     | 1.25      | 124.49 |
| 15      |     | I       | 121.39 | P          | 1.61  | 119.78     | 1.08   | 120.31     | 1.43  | 119.96     | 1.68      | 119.71     | 1.52      | 119.87 |
|         |     | II      | 121.81 | S          | 1.56  | 120.25     | frozen | -----      | 1.40  | 120.41     | 1.72      | 120.09     | 1.54      | 120.27 |
| 16      |     | I       | 123.61 | P          | 10.09 | 113.52     | 9.37   | 114.24     | 9.88  | 113.73     | 10.05     | 113.56     | 10.22     | 113.39 |
|         |     | II      | 124.03 | P          | 10.05 | 113.98     | 9.19   | 114.84     | 9.65  | 114.38     | 9.81      | 114.22     | 9.94      | 114.09 |
|         |     | III     | 123.92 | P          | 5.37  | 118.55     | 4.64   | 119.28     | 4.96  | 118.96     | 5.12      | 118.80     | 5.50      | 118.42 |
|         |     | IV      | 123.91 | S          |       |            | 2.03   | 121.88     | 2.44  | 121.47     | 2.62      | 121.29     | 2.67      | 121.24 |
| 18      | *   | I       |        | P          | 5.98  |            | 5.08   |            | 4.26  |            | destroyed |            | destroyed |        |
|         |     | II      |        | P          | 4.42  |            | 3.05   |            | 3.80  |            | 3.90      |            | 4.95      |        |
|         |     | III     |        | S          | 4.27  |            | 2.42   |            | 3.44  |            | 4.25      |            | 4.41      |        |
| 21      | *   | I       | 185.09 | P          | 10.25 |            | 8.87   |            | 9.02  |            | 9.63      | 175.46     | 9.32      | 175.77 |
|         |     | II      | 185.03 | P          | 8.61  |            | 6.64   |            | 7.26  |            | 7.83      | 177.20     | 7.98      | 177.05 |
|         |     | III     | 185.30 | S          | 4.59  |            | 1.90   |            | 2.63  |            | 4.27      | 181.03     | 5.23      | 180.07 |
| 22      | *   | I       | 183.26 | P          | 5.18  |            | bent   |            | 3.15  |            | 4.60      | 178.66     | 11.00     | 172.26 |
|         |     | II      | 182.84 | P          | 6.03  |            | bent   |            | 3.59  |            | 5.59      | 177.25     | 6.85      | 175.99 |
|         |     | III     | 182.93 | S          | 5.72  |            | bent   |            | 3.67  |            | 5.64      | 177.29     | 6.95      | 175.98 |
| 23      |     | I       | 185.77 | P          | 9.77  | 176.00     | 8.31   | 177.46     | 8.58  | 177.19     | 8.00      | 177.77     | 9.30      | 176.47 |
|         |     | II      | 185.54 | P          | 7.49  | 178.05     | 2.69   | 182.85     | 3.02  | 182.52     | 4.48      | 181.06     | 6.06      | 179.48 |
|         |     | III     | 185.60 | S          | 5.52  | 180.08     | 1.62   | 183.98     | 3.22  | 182.38     | 4.69      | 180.91     | 5.62      | 179.98 |
| =====   |     |         |        |            |       |            |        |            |       |            |           |            |           |        |

P - Piezometer S - Standpipe G - Gas Monitor

B.T.O.P. - Below Top Of Pipe, Elevations in metres above datum

\* Monitors at 11A, 21 and 22 repaired in April 1986 and resurveyed in May 1987.

\* Monitors 18-II and 18-III repaired fall of 1987 - need to be resurveyed

\* Monitor 11A-I repaired and elevation recalculated in January 1988.

PROJECT NO. 87-224  
BURLINGTON LANDFILL

## GROUND WATER LEVELS

| =====       |         |                            |      |            |        |            |        |            |        |            |        |            |        |
|-------------|---------|----------------------------|------|------------|--------|------------|--------|------------|--------|------------|--------|------------|--------|
| B.H.<br>NO. | MONITOR |                            |      | Oct. 25/85 |        | Feb. 17/86 |        | July 16/86 |        | Aug. 29/87 |        | Nov. 17/87 |        |
|             | No.     | TOP OF<br>MONITOR<br>ELEV. | Type | DEPTH      |        | DEPTH      |        | DEPTH      |        | DEPTH      |        | DEPTH      |        |
|             |         |                            |      | ELEV.      |        | ELEV.      |        | ELEV.      |        | ELEV.      |        | ELEV.      |        |
|             |         |                            |      | B.T.O.P.   |        | B.T.O.P.   |        | B.T.O.P.   |        | B.T.O.P.   |        | B.T.O.P.   |        |
|             |         |                            |      | (m)        | (m)    | (m)        | (m)    | (m)        | (m)    | (m)        | (m)    | (m)        | (m)    |
| -----       |         |                            |      |            |        |            |        |            |        |            |        |            |        |
| 24          | I       | 127.96                     | P    | 11.09      | 116.87 | 10.86      | 117.10 | 11.04      | 116.92 | 11.23      | 116.73 | 11.28      | 116.68 |
|             | II      | 128.10                     | P    | 8.25       | 119.85 | 7.39       | 120.71 | 7.81       | 120.29 | 8.06       | 120.04 | 8.33       | 119.77 |
|             | III     | 128.16                     | S    | 5.59       | 122.57 | 4.03       | 124.13 | 4.52       | 123.64 | 4.20       | 123.96 | 4.91       | 123.25 |
| 25          | I       | 183.29                     | P    | dry        | -----  | dry        | -----  | dry        | -----  | 15.19      | 168.10 | 16.46      | 166.83 |
| 26          | I       | 120.46                     | P    | 6.85       | 113.61 | 6.10       | 114.36 | 6.63       | 113.83 | 6.81       | 113.65 | 6.99       | 113.47 |
|             | II      | 120.51                     | P    | 5.66       | 114.85 | 4.79       | 115.72 | 5.44       | 115.07 | 5.68       | 114.83 | 5.83       | 114.68 |
|             | III     | 120.44                     | S    | 5.60       | 114.84 | 1.65       | 118.79 | 2.36       | 118.08 | 3.33       | 117.11 | 4.43       | 116.01 |
| 27          | I       | 116.31                     | P    | 2.64       | 113.67 | 1.94       | 114.37 | 2.47       | 113.84 | 2.67       | 113.64 | 2.86       | 113.45 |
|             | II      | 116.36                     | P    | 2.66       | 113.70 | 1.95       | 114.41 | 2.49       | 113.87 | 2.69       | 113.67 | 2.87       | 113.49 |
|             | III     | 116.35                     | S    | 1.62       | 114.73 | 1.12       | 115.23 | 1.66       | 114.69 | 2.13       | 114.22 | 2.18       | 114.17 |
| 28          | I       | 134.48                     | S    | 4.82       | 129.66 | 2.29       | 132.19 | 2.72       | 131.76 | 3.33       | 131.15 | 3.66       | 130.82 |
| 29          | I       | 174.41                     | S    | 8.40       | 166.01 | 6.42       | 167.99 | 7.74       | 166.67 | 7.98       | 166.43 | 8.26       | 166.15 |
| 30          | I       | 170.75                     | S    | 8.86       | 161.89 | 7.73       | 163.02 | 7.53       | 163.22 | 7.69       | 163.06 | 8.04       | 162.71 |
| 31          | I       | 173.10                     | S    | dry        | -----  | 8.36       | 164.74 | 8.34       | 164.76 | 8.36       | 164.74 | 8.56       | 164.54 |
| 32          | I       | 122.90                     | P    |            |        |            |        |            |        | 3.88       | 119.02 | 4.42       | 118.48 |
|             | II      | 123.16                     | P    |            |        |            |        |            |        | 3.40       | 119.76 | 4.08       | 119.08 |
|             | III     | 123.29                     | S    |            |        |            |        |            |        | 3.77       | 119.52 | 2.05       | 121.24 |
| 33          | I       | 143.80                     | S    |            |        |            |        |            |        | dry        | -----  | 4.83       | 138.97 |
| 34          | I       | 129.12                     | S    |            |        |            |        |            |        | 4.26       | 124.86 | 1.54       | 127.58 |
| =====       |         |                            |      |            |        |            |        |            |        |            |        |            |        |

P - Piezometer    S - Standpipe    G - Gas Monitor

B.T.O.P. - Below Top Of Pipe, Elevations in metres above datum

\* Monitors at 11A, 21 and 22 repaired in April 1986 and resurveyed in May 1987.

\* Monitors 18-II and 18-III repaired fall of 1987 - need to be resurveyed

\* Monitor 11A-I repaired and elevation recalculated in January 1988.

## BURLINGTON LANDFILL

## 1987 MONITORING PROGRAM

## WELL DEVELOPMENT AND PURGING NOTES - SEPTEMBER 9-17, 1987

| Monitor<br>Number | Well Bore*<br>Volume<br>L | Volume<br>Removed<br>L |
|-------------------|---------------------------|------------------------|
| 12-II             | 3                         | 4                      |
| 13-II             | 1                         | 1                      |
| 14-I              | 7                         | 8                      |
| 14-II             | 4                         | 7                      |
| 15-I              | 7                         | 10                     |
| 15-II             | 4                         | 9                      |
| 15-IV             | 3                         | 8                      |
| 18-II             | 6                         | 8                      |
| 18-III            | dry                       | dry                    |
| 21-I              | 7                         | 6                      |
| 21-II             | 5                         | 3                      |
| 21-III            | 4                         | 7                      |
| 22-I              | 10                        | 8                      |
| 22-II             | 5                         | 6                      |
| 22-III            | 1                         | 1                      |
| 23-I              | 19                        | 58                     |
| 23-II             | 15                        | 20                     |
| 23-III            | 6                         | 18                     |
| 24-I              | 13                        | 29                     |
| 24-II             | 8                         | 26                     |
| 24-III            | 4                         | 12                     |
| 26-I              | 22                        | 66                     |
| 26-II             | 13                        | 35                     |
| 26-III            | 6                         | 15                     |
| 27-I              | 30                        | 90                     |
| 27-II             | 18                        | 58                     |
| 27-III            | 8                         | 25                     |
| 28-I              | 7                         | 22                     |
| 29-I              | 2                         | 6                      |
| 30-I              | 3                         | 9                      |
| 31-I              | <1                        | <1 ---- insufficient   |
| 32-I              | 28                        | 81 water for           |
| 32-II             | 18                        | 56 sampling            |
| 32-III            | 4.6                       | 15                     |
| 33-I              | dry                       | dry                    |
| 34-I              | 2                         | 5                      |

\* Based on water levels taken on August 29, 1987

## BURLINGTON LANDFILL

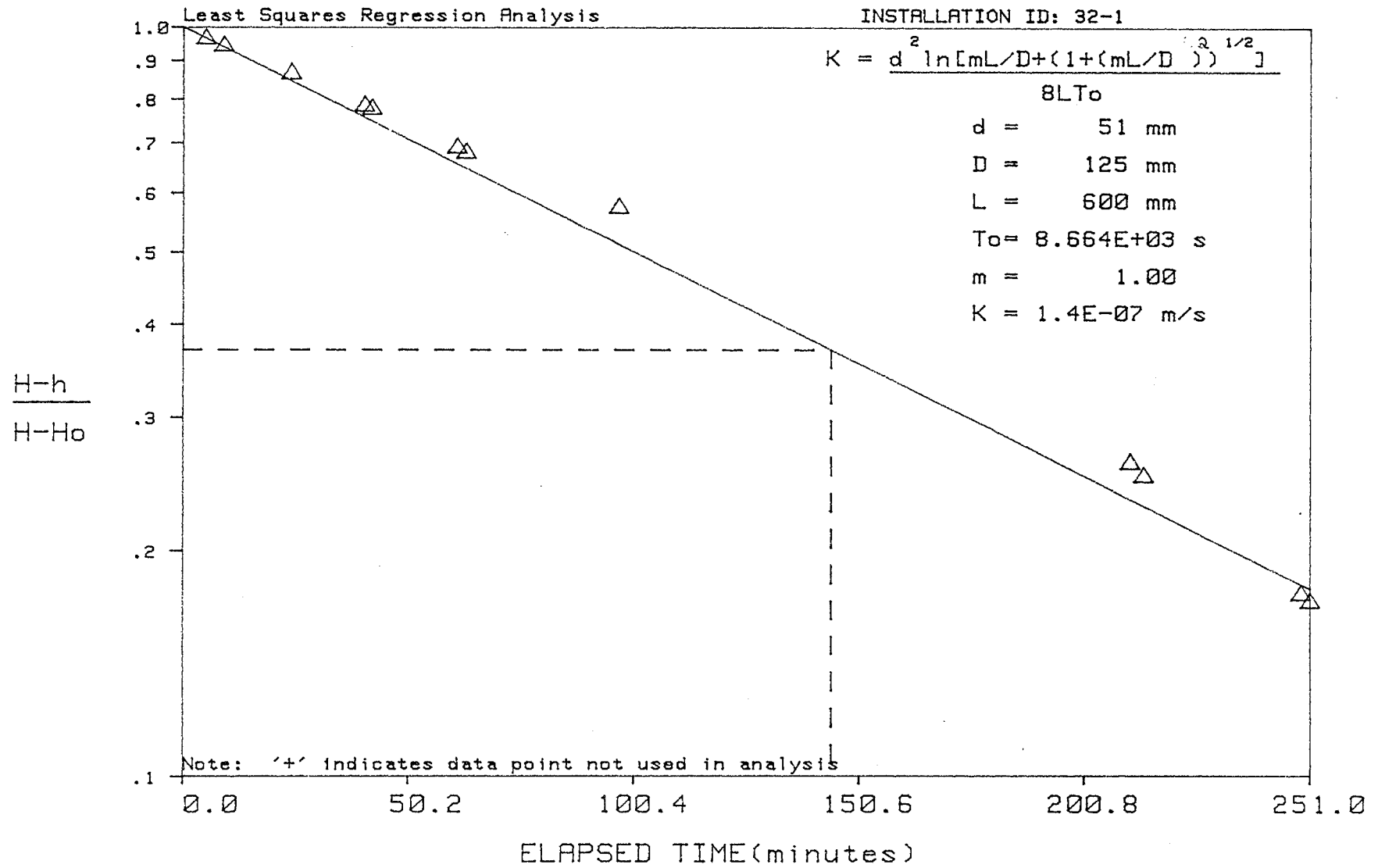
## 1987 MONITORING PROGRAM

## WELL DEVELOPMENT AND PURGING NOTES - NOVEMBER 17-19, 1987

| Monitor<br>Number | Well Bore*<br>Volume<br>L | Volume<br>Removed<br>L |              |
|-------------------|---------------------------|------------------------|--------------|
| 12-II             | 4                         | 6                      |              |
| 13-II             | 2                         | 1.6                    |              |
| 14-I              | 8                         | 2.1                    |              |
| 14-II             | 4                         | 14                     |              |
| 15-I              | 8                         | 14                     |              |
| 15-II             | 4                         | 10                     |              |
| 16-I              | 15                        | 31                     |              |
| 16-II             | 7                         | 12                     |              |
| 16-III            | 2                         | 5                      |              |
| 16-IV             | 3                         | 20                     |              |
| 18-II             | 5                         | 7                      |              |
| 18-III            | 2                         | 2                      |              |
| 21-I              | 7                         | 8                      |              |
| 21-II             | 5                         | 3                      |              |
| 21-III            | 4                         | 3                      |              |
| 22-I              | 5                         | 9                      |              |
| 22-II             | 4                         | 10                     |              |
| 22-III            | <1                        | <1                     |              |
| 23-I              | 18                        | 75                     |              |
| 23-II             | 13                        | 20                     |              |
| 23-III            | 4                         | 21                     |              |
| 24-I              | 14                        | 37                     |              |
| 24-II             | 8                         | 34                     |              |
| 24-III            | 3                         | 16                     |              |
| 26-I              | 23                        | 96                     |              |
| 26-II             | 13                        | 33                     |              |
| 26-III            | 4                         | 8                      |              |
| 27-I              | 31                        | 95                     |              |
| 27-II             | 19                        | 60                     |              |
| 27-III            | 8                         | 35                     |              |
| 28-I              | 7                         | 20                     |              |
| 29-I              | 1                         | 5                      |              |
| 30-I              | 2                         | 8                      |              |
| 31-I              | <1                        | <1                     | insufficient |
| 32-I              | 26                        | 78                     | water for    |
| 32-II             | 17                        | 51                     | sampling     |
| 32-III            | 8                         | 24                     |              |
| 33-I              | dry                       | dry                    |              |
| 34-I              | 7                         | 16                     |              |

\* Based on water levels taken on November 17, 1987

# SLUG TEST ANALYSIS - HVORSLEV'S METHOD



PROJECT NAME: BURLINGTON LANDFILL PROJECT NUMBER: 87-224

## SLUG TEST ANALYSIS

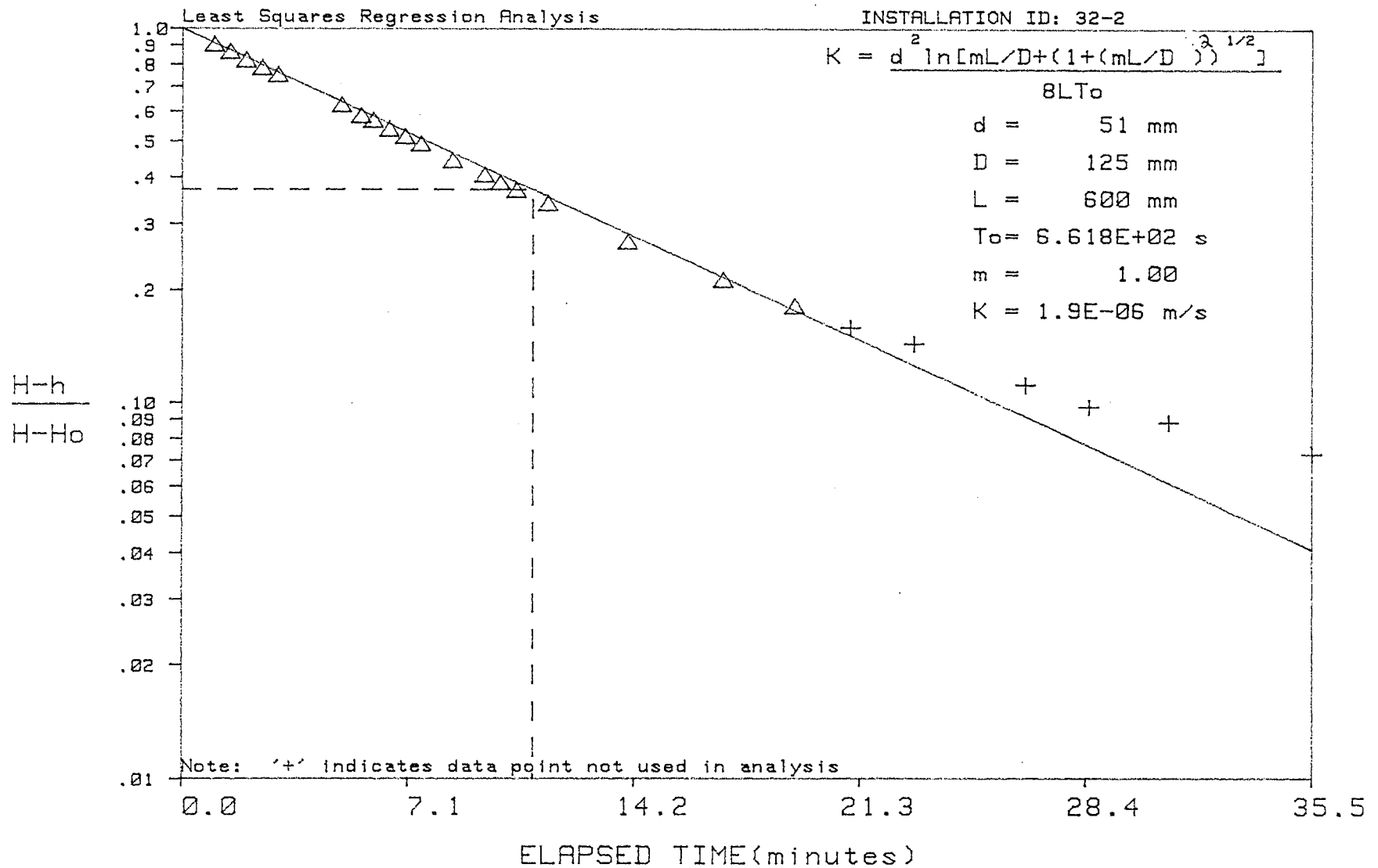
(Hvorslev's Method)

PROJECT NAME: BURLINGTON LANDFILL  
 PROJECT NUMBER: 87-224  
 INSTALLATION ID: 32-1  
 TEST START DATE: 20 NOV 1987  
 TEST START TIME: 10:50:00  
 STATIC WATER LEVEL H (mbRP): 4.91  
 INITIAL WATER LEVEL  $H_o$  (mbRP): 17.19

| DATE        | ACTUAL<br>TIME | CUMULATIVE<br>TIME<br>(minutes) | WATER<br>LEVEL<br>(mbRP) | $\frac{H-h}{H-H_o}$ |
|-------------|----------------|---------------------------------|--------------------------|---------------------|
| 20 NOV 1987 | 10:55:00       | 5.00                            | 16.82                    | .97                 |
| 20 NOV 1987 | 10:59:00       | 9.00                            | 16.56                    | .95                 |
| 20 NOV 1987 | 11:14:00       | 24.00                           | 15.62                    | .87                 |
| 20 NOV 1987 | 11:30:20       | 40.33                           | 14.60                    | .79                 |
| 20 NOV 1987 | 11:32:00       | 42.00                           | 14.50                    | .78                 |
| 20 NOV 1987 | 11:51:00       | 61.00                           | 13.44                    | .69                 |
| 20 NOV 1987 | 11:53:00       | 63.00                           | 13.31                    | .68                 |
| 20 NOV 1987 | 12:27:00       | 97.00                           | 12.00                    | .58                 |
| 20 NOV 1987 | 14:21:00       | 211.00                          | 8.14                     | .26                 |
| 20 NOV 1987 | 14:24:00       | 214.00                          | 8.01                     | .25                 |
| 20 NOV 1987 | 14:59:00       | 249.00                          | 7.07                     | .18                 |
| 20 NOV 1987 | 15:01:00       | 251.00                          | 7.02                     | .17                 |

NOTE - mbRP is metres below Reference Point elevation  
 - h is reading in mbRP  
 - + data not used in analysis

# SLUG TEST ANALYSIS - HVORSLEV'S METHOD



PROJECT NAME: BURLINGTON LANDFILL PROJECT NUMBER: 87-224

## SLUG TEST ANALYSIS

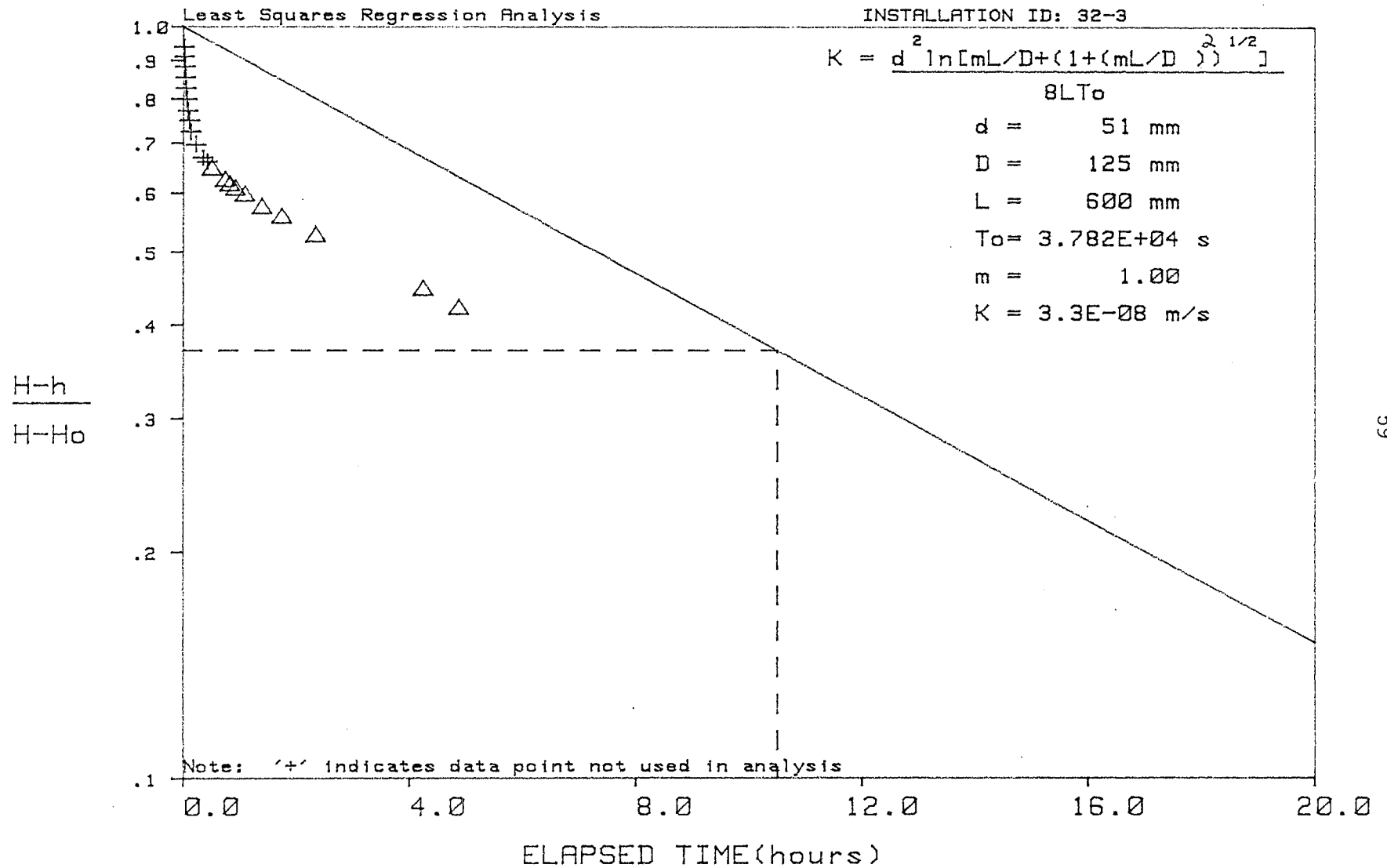
(Hvorslev's Method)

PROJECT NAME: BURLINGTON LANDFILL  
 PROJECT NUMBER: 87-224  
 INSTALLATION ID: 32-2  
 TEST START DATE: 20 NOV 1987  
 TEST START TIME: 10:25:00  
 STATIC WATER LEVEL H (mbRP): 4.37  
 INITIAL WATER LEVEL Ho (mbRP): 10.94

| DATE        | ACTUAL<br>TIME | CUMULATIVE<br>TIME<br>(minutes) | WATER<br>LEVEL<br>(mbRP) | H-h<br>H-Ho |   |
|-------------|----------------|---------------------------------|--------------------------|-------------|---|
| 20 NOV 1987 | 10:26:00       | 1.00                            | 10.32                    | .91         |   |
| 20 NOV 1987 | 10:26:30       | 1.50                            | 10.05                    | .86         |   |
| 20 NOV 1987 | 10:27:00       | 2.00                            | 9.77                     | .82         |   |
| 20 NOV 1987 | 10:27:30       | 2.50                            | 9.52                     | .78         |   |
| 20 NOV 1987 | 10:28:00       | 3.00                            | 9.31                     | .75         |   |
| 20 NOV 1987 | 10:30:00       | 5.00                            | 8.48                     | .63         |   |
| 20 NOV 1987 | 10:30:37       | 5.62                            | 8.21                     | .58         |   |
| 20 NOV 1987 | 10:31:00       | 6.00                            | 8.10                     | .57         |   |
| 20 NOV 1987 | 10:31:30       | 6.50                            | 7.91                     | .54         |   |
| 20 NOV 1987 | 10:32:00       | 7.00                            | 7.75                     | .51         |   |
| 20 NOV 1987 | 10:32:30       | 7.50                            | 7.60                     | .49         |   |
| 20 NOV 1987 | 10:33:30       | 8.50                            | 7.29                     | .44         |   |
| 20 NOV 1987 | 10:34:30       | 9.50                            | 7.04                     | .41         |   |
| 20 NOV 1987 | 10:35:00       | 10.00                           | 6.91                     | .39         |   |
| 20 NOV 1987 | 10:35:30       | 10.50                           | 6.80                     | .37         |   |
| 20 NOV 1987 | 10:36:30       | 11.50                           | 6.61                     | .34         |   |
| 20 NOV 1987 | 10:39:00       | 14.00                           | 6.14                     | .27         |   |
| 20 NOV 1987 | 10:42:00       | 17.00                           | 5.77                     | .21         |   |
| 20 NOV 1987 | 10:44:15       | 19.25                           | 5.56                     | .18         |   |
| 20 NOV 1987 | 10:46:00       | 21.00                           | 5.41                     | .16         | + |
| 20 NOV 1987 | 10:48:00       | 23.00                           | 5.31                     | .14         | + |
| 20 NOV 1987 | 10:51:30       | 26.50                           | 5.10                     | .11         | + |
| 20 NOV 1987 | 10:53:30       | 28.50                           | 5.01                     | .10         | + |
| 20 NOV 1987 | 10:56:00       | 31.00                           | 4.95                     | .09         | + |
| 20 NOV 1987 | 11:00:30       | 35.50                           | 4.85                     | .07         | + |

NOTE - mbRP is metres below Reference Point elevation  
 - h is reading in mbRP  
 - + data not used in analysis

# SLUG TEST ANALYSIS - HVORSLEV'S METHOD



PROJECT NAME: BURLINGTON LANDFILL PROJECT NUMBER: 87-224

## SLUG TEST ANALYSIS

(Hvorslev's Method)

PROJECT NAME: BURLINGTON LANDFILL  
 PROJECT NUMBER: 87-224  
 INSTALLATION ID: 32-3  
 TEST START DATE: 20 NOV 1987  
 TEST START TIME: 10:07:40  
 STATIC WATER LEVEL H (mbRP): 2.13  
 INITIAL WATER LEVEL  $H_0$  (mbRP): 5.72

| DATE        | ACTUAL<br>TIME | CUMULATIVE<br>TIME<br>(hours) | WATER<br>LEVEL<br>(mbRP) | $\frac{H-h}{H-H_0}$ |   |
|-------------|----------------|-------------------------------|--------------------------|---------------------|---|
| 20 NOV 1987 | 10:08:25       | .01                           | 5.50                     | .94                 | + |
| 20 NOV 1987 | 10:08:50       | .02                           | 5.40                     | .91                 | + |
| 20 NOV 1987 | 10:09:20       | .03                           | 5.30                     | .88                 | + |
| 20 NOV 1987 | 10:09:46       | .04                           | 5.20                     | .86                 | + |
| 20 NOV 1987 | 10:10:20       | .04                           | 5.10                     | .83                 | + |
| 20 NOV 1987 | 10:11:18       | .06                           | 5.00                     | .80                 | + |
| 20 NOV 1987 | 10:12:27       | .08                           | 4.90                     | .77                 | + |
| 20 NOV 1987 | 10:14:00       | .11                           | 4.82                     | .75                 | + |
| 20 NOV 1987 | 10:15:30       | .13                           | 4.73                     | .72                 | + |
| 20 NOV 1987 | 10:21:00       | .22                           | 4.63                     | .70                 | + |
| 20 NOV 1987 | 10:28:30       | .35                           | 4.53                     | .67                 | + |
| 20 NOV 1987 | 10:33:00       | .42                           | 4.50                     | .66                 | + |
| 20 NOV 1987 | 10:38:00       | .51                           | 4.46                     | .65                 |   |
| 20 NOV 1987 | 10:52:00       | .74                           | 4.38                     | .63                 |   |
| 20 NOV 1987 | 10:57:00       | .82                           | 4.35                     | .62                 |   |
| 20 NOV 1987 | 11:03:00       | .92                           | 4.32                     | .61                 |   |
| 20 NOV 1987 | 11:13:00       | 1.09                          | 4.28                     | .60                 |   |
| 20 NOV 1987 | 11:31:00       | 1.39                          | 4.20                     | .58                 |   |
| 20 NOV 1987 | 11:52:00       | 1.74                          | 4.14                     | .56                 |   |
| 20 NOV 1987 | 12:28:00       | 2.34                          | 4.03                     | .53                 |   |
| 20 NOV 1987 | 14:22:00       | 4.24                          | 3.74                     | .45                 |   |
| 20 NOV 1987 | 15:00:00       | 4.87                          | 3.65                     | .42                 |   |

NOTE - mbRP is metres below Reference Point elevation  
 - h is reading in mbRP  
 - + data not used in analysis



**APPENDIX II**

LEACHATE FLOW RATES  
SW3 WEIR SPECIFICATIONS AND EQUATIONS  
FALCON CREEK STREAM FLOW DATA AND  
PRECIPITATION  
WATER BALANCE CALCULATIONS FOR 1987

## BURLINGTON LANDFILL LEACHATE FLOW RATES

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OCTOBER 1986 TO DECEMBER 1987

| DATE      | DAILY<br>VOLUME<br>(L) | MEAN<br>DAILY<br>DISCHARGE<br>L/E |
|-----------|------------------------|-----------------------------------|
| 09-Oct-86 | 35,015                 | 0.69                              |
| 10-Oct-86 | 52,049                 | 0.60                              |
| 11-Oct-86 | 45,425                 | 0.53                              |
| 12-Oct-86 | 45,425                 | 0.53                              |
| 13-Oct-86 | 57,254                 | 0.66                              |
| 14-Oct-86 | 327,438                | 3.79                              |
| 15-Oct-86 | 110,723                | 1.28                              |
| 16-Oct-86 | 62,459                 | 0.72                              |
| 17-Oct-86 | 45,425                 | 0.53                              |
| 18-Oct-86 | 23,186                 | 0.27                              |
| 19-Oct-86 | MISSING DATA           |                                   |
| 20-Oct-86 | 18,927                 | 0.22                              |
| 21-Oct-86 | 45,425                 | 0.53                              |
| 22-Oct-86 | 35,488                 | 0.41                              |
| 23-Oct-86 | 34,069                 | 0.39                              |
| 24-Oct-86 | 34,069                 | 0.39                              |
| 25-Oct-86 | 34,069                 | 0.39                              |
| 26-Oct-86 | 33,596                 | 0.39                              |
| 27-Oct-86 | 198,261                | 2.29                              |
| 28-Oct-86 | 187,378                | 2.17                              |
| 29-Oct-86 | 65,298                 | 0.76                              |
| 30-Oct-86 | 49,210                 | 0.57                              |
| 31-Oct-86 | 45,425                 | 0.53                              |
| 01-Nov-86 | 45,425                 | 0.53                              |
| 02-Nov-86 | 60,093                 | 0.70                              |
| 03-Nov-86 | 124,256                | 1.44                              |
| 04-Nov-86 | 69,084                 | 0.80                              |
| 05-Nov-86 | 68,137                 | 0.79                              |
| 06-Nov-86 | 65,298                 | 0.76                              |
| 07-Nov-86 | 56,781                 | 0.66                              |
| 08-Nov-86 | 54,415                 | 0.63                              |
| 09-Nov-86 | 65,298                 | 0.76                              |
| 10-Nov-86 | 31,230                 | 0.36                              |
| 11-Nov-86 | 65,298                 | 0.76                              |
| 12-Nov-86 | 73,815                 | 0.85                              |
| 13-Nov-86 | 79,494                 | 0.92                              |
| 14-Nov-86 | 58,674                 | 0.68                              |
| 15-Nov-86 | 63,406                 | 0.73                              |
| 16-Nov-86 | 68,137                 | 0.79                              |
| 17-Nov-86 | 68,137                 | 0.79                              |
| 18-Nov-86 | 68,137                 | 0.79                              |
| 19-Nov-86 | 80,913                 | 0.94                              |
| 20-Nov-86 | 56,308                 | 0.65                              |
| 21-Nov-86 | 46,371                 | 0.54                              |
| 22-Nov-86 | 80,913                 | 0.94                              |
| 23-Nov-86 | 80,913                 | 0.94                              |
| 24-Nov-86 | 280,594                | 3.25                              |
| 25-Nov-86 | 248,891                | 2.88                              |
| 26-Nov-86 | 953,450                | 11.04                             |
| 27-Nov-86 | 333,116                | 3.86                              |

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BURLINGTON LANDFILL LEACHATE FLOW RATES

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OCTOBER 1986 TO DECEMBER 1987

MEAN  
DAILY  
DISCHARGE  
L/S

| DATE      | VOLUME<br>(L) | DISCHARGE<br>L/S |
|-----------|---------------|------------------|
| 28-Nov-86 | 141,480       | 1.64             |
| 29-Nov-86 | 120,660       | 1.40             |
| 30-Nov-86 | MISSING DATA  |                  |
| 01-Dec-86 | MISSING DATA  |                  |
| 02-Dec-86 | MISSING DATA  |                  |
| 03-Dec-86 | MISSING DATA  |                  |
| 04-Dec-86 | MISSING DATA  |                  |
| 05-Dec-86 | MISSING DATA  |                  |
| 06-Dec-86 | 93,689        | 1.08             |
| 07-Dec-86 | 122,553       | 1.42             |
| 08-Dec-86 | 137,694       | 1.59             |
| 09-Dec-86 | 94,162        | 1.09             |
| 10-Dec-86 | MISSING DATA  |                  |
| 11-Dec-86 | 14,195        | 0.16             |
| 12-Dec-86 | 63,879        | 0.74             |
| 13-Dec-86 | 95,582        | 1.11             |
| 14-Dec-86 | 90,850        | 0.00             |
| 15-Dec-86 | 90,850        | 0.00             |
| 16-Dec-86 | 95,108        | 3.20             |
| 17-Dec-86 | 123,972       | 1.43             |
| 18-Dec-86 | 352,989       | 4.09             |
| 19-Dec-86 | 181,700       | 2.10             |
| 20-Dec-86 | 143,372       | 1.66             |
| 21-Dec-86 | 136,275       | 1.58             |
| 22-Dec-86 | 136,275       | 1.58             |
| 23-Dec-86 | 306,618       | 3.55             |
| 24-Dec-86 | 964,333       | 11.16            |
| 25-Dec-86 | 290,057       | 3.36             |
| 26-Dec-86 | 259,774       | 3.01             |
| 27-Dec-86 | 212,929       | 2.46             |
| 28-Dec-86 | 184,539       | 2.14             |
| 29-Dec-86 | 187,378       | 2.17             |
| 30-Dec-86 | 187,378       | 2.17             |
| 31-Dec-86 | 181,700       | 2.10             |
| 01-Jan-87 | 187,378       | 2.17             |
| 02-Jan-87 | 195,895       | 2.27             |
| 03-Jan-87 | 156,148       | 1.81             |
| 04-Jan-87 | 136,275       | 1.58             |
| 05-Jan-87 | 140,060       | 1.62             |
| 06-Jan-87 | 144,792       | 1.68             |
| 07-Jan-87 | MISSING DATA  |                  |
| 08-Jan-87 | MISSING DATA  |                  |
| 09-Jan-87 | MISSING DATA  |                  |
| 10-Jan-87 | MISSING DATA  |                  |
| 11-Jan-87 | MISSING DATA  |                  |
| 12-Jan-87 | MISSING DATA  |                  |
| 13-Jan-87 | 176,022       | 2.04             |
| 14-Jan-87 | 253,149       | 2.93             |
| 15-Jan-87 | 622,227       | 7.20             |
| 16-Jan-87 | 250,783       | 2.90             |

## BURLINGTON LANDFILL LEACHATE FLOW RATES

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OCTOBER 1986 TO DECEMBER 1987

| DATE      | DAILY<br>VOLUME<br>(L) | MEAN<br>DAILY<br>DISCHARGE<br>L/s |
|-----------|------------------------|-----------------------------------|
| 17-Jan-87 | 144,792                | 1.68                              |
| 18-Jan-87 | MISSING DATA           |                                   |
| 19-Jan-87 | MISSING DATA           |                                   |
| 20-Jan-87 | 181,700                | 2.10                              |
| 21-Jan-87 | 181,700                | 2.10                              |
| 22-Jan-87 | 201,573                | 2.33                              |
| 23-Jan-87 | 197,314                | 2.28                              |
| 24-Jan-87 | MISSING DATA           |                                   |
| 25-Jan-87 | MISSING DATA           |                                   |
| 26-Jan-87 | MISSING DATA           |                                   |
| 27-Jan-87 | 212,929                | 2.46                              |
| 28-Jan-87 | 224,286                | 2.60                              |
| 29-Jan-87 | 227,125                | 2.63                              |
| 30-Jan-87 | 224,286                | 2.60                              |
| 31-Jan-87 | 215,768                | 2.50                              |
| 01-Feb-87 | 224,286                | 2.60                              |
| 02-Feb-87 | 221,446                | 2.56                              |
| 03-Feb-87 | 210,090                | 2.43                              |
| 04-Feb-87 | 198,734                | 2.30                              |
| 05-Feb-87 | 181,700                | 2.10                              |
| 06-Feb-87 | 194,475                | 2.25                              |
| 07-Feb-87 | 233,276                | 2.70                              |
| 08-Feb-87 | 298,574                | 3.46                              |
| 09-Feb-87 | MISSING DATA           |                                   |
| 10-Feb-87 | MISSING DATA           |                                   |
| 11-Feb-87 | MISSING DATA           |                                   |
| 12-Feb-87 | MISSING DATA           |                                   |
| 13-Feb-87 | 198,261                | 2.29                              |
| 14-Feb-87 | 190,217                | 2.20                              |
| 15-Feb-87 | 181,700                | 2.10                              |
| 16-Feb-87 | 187,378                | 2.17                              |
| 17-Feb-87 | 207,251                | 2.40                              |
| 18-Feb-87 | 129,650                | 1.50                              |
| 19-Feb-87 | 68,137                 | 0.79                              |
| 20-Feb-87 | 74,762                 | 0.87                              |
| 21-Feb-87 | 90,850                 | 1.05                              |
| 22-Feb-87 | 107,884                | 1.25                              |
| 23-Feb-87 | 83,752                 | 0.97                              |
| 24-Feb-87 | 79,494                 | 0.92                              |
| 25-Feb-87 | 73,815                 | 0.85                              |
| 26-Feb-87 | 79,494                 | 0.92                              |
| 27-Feb-87 | 85,881                 | 0.99                              |
| 28-Feb-87 | 169,397                | 1.96                              |
| 01-Mar-87 | 846,749                | 9.80                              |
| 02-Mar-87 | 613,710                | 7.10                              |
| 03-Mar-87 | 144,792                | 1.68                              |
| 04-Mar-87 | 92,269                 | 1.07                              |
| 05-Mar-87 | 107,174                | 1.24                              |
| 06-Mar-87 | 227,834                | 2.64                              |
| 07-Mar-87 | 353,463                | 4.09                              |

## BURLINGTON LANDFILL LEACHATE FLOW RATES

OCTOBER 1986 TO DECEMBER 1987

| DATE      | DAILY<br>VOLUME<br>(L) | MEAN<br>DAILY<br>DISCHARGE<br>L/s |
|-----------|------------------------|-----------------------------------|
| 08-Mar-87 | 326,492                | 3.78                              |
| 09-Mar-87 | 146,211                | 1.69                              |
| 10-Mar-87 | 79,494                 | 0.92                              |
| 11-Mar-87 | 76,655                 | 0.89                              |
| 12-Mar-87 | 68,137                 | 0.79                              |
| 13-Mar-87 | 62,459                 | 0.72                              |
| 14-Mar-87 | 96,528                 | 1.12                              |
| 15-Mar-87 | 68,137                 | 0.79                              |
| 16-Mar-87 | 68,137                 | 0.79                              |
| 17-Mar-87 | 68,137                 | 0.79                              |
| 18-Mar-87 | 130,123                | 1.51                              |
| 19-Mar-87 | 59,620                 | 0.69                              |
| 20-Mar-87 | 56,781                 | 0.66                              |
| 21-Mar-87 | 56,781                 | 0.66                              |
| 22-Mar-87 | 65,298                 | 0.76                              |
| 23-Mar-87 | 68,137                 | 0.79                              |
| 24-Mar-87 | 65,298                 | 0.76                              |
| 25-Mar-87 | 68,137                 | 0.79                              |
| 26-Mar-87 | 117,821                | 1.36                              |
| 27-Mar-87 | 90,850                 | 1.05                              |
| 28-Mar-87 | 90,850                 | 1.05                              |
| 29-Mar-87 | 90,850                 | 1.05                              |
| 30-Mar-87 | 100,313                | 1.16                              |
| 31-Mar-87 | 415,212                | 4.81                              |
| 01-Apr-87 | 320,813                | 3.71                              |
| 02-Apr-87 | 323,653                | 3.75                              |
| 03-Apr-87 | 597,622                | 6.92                              |
| 04-Apr-87 | 569,231                | 6.59                              |
| 05-Apr-87 | 958,182                | 11.09                             |
| 06-Apr-87 | 1,009,285              | 11.68                             |
| 07-Apr-87 | 847,459                | 9.81                              |
| 08-Apr-87 | 356,302                | 4.12                              |
| 09-Apr-87 | 225,705                | 2.61                              |
| 10-Apr-87 | 171,763                | 1.99                              |
| 11-Apr-87 | 35,488                 | 0.41                              |
| 12-Apr-87 | MISSING DATA           |                                   |
| 13-Apr-87 | MISSING DATA           |                                   |
| 14-Apr-87 | MISSING DATA           |                                   |
| 14-Apr-87 | MISSING DATA           |                                   |
| 15-Apr-87 | 207,251                | 2.40                              |
| 16-Apr-87 | 177,441                | 2.05                              |
| 17-Apr-87 | 173,183                | 2.00                              |
| 18-Apr-87 | 163,246                | 1.89                              |
| 19-Apr-87 | 156,148                | 1.81                              |
| 20-Apr-87 | 115,692                | 1.34                              |
| 21-Apr-87 | 131,543                | 1.52                              |
| 22-Apr-87 | 109,304                | 1.27                              |
| 23-Apr-87 | 126,811                | 1.47                              |
| 24-Apr-87 | 132,963                | 1.54                              |
| 25-Apr-87 | 113,562                | 1.31                              |

## BURLINGTON LANDFILL LEACHATE FLOW RATES

=====

OCTOBER 1986 TO DECEMBER 1987

| DATE      | DAILY<br>VOLUME<br>(L) | MEAN<br>DAILY<br>DISCHARGE<br>L/s |
|-----------|------------------------|-----------------------------------|
| 26-Apr-87 | 113,562                | 1.31                              |
| 27-Apr-87 | 130,597                | 1.51                              |
| 28-Apr-87 | 136,275                | 1.58                              |
| 29-Apr-87 | 141,953                | 1.64                              |
| 30-Apr-87 | 156,148                | 1.81                              |
| 01-May-87 | 174,602                | 2.02                              |
| 02-May-87 | 192,583                | 2.23                              |
| 03-May-87 | 198,024                | 2.29                              |
| 04-May-87 | 206,541                | 2.39                              |
| 05-May-87 | 219,790                | 2.54                              |
| 06-May-87 | 227,361                | 2.63                              |
| 07-May-87 | 264,979                | 3.07                              |
| 08-May-87 | 313,716                | 3.63                              |
| 09-May-87 | 314,662                | 3.64                              |
| 10-May-87 | 341,633                | 3.95                              |
| 11-May-87 | 320,813                | 3.71                              |
| 12-May-87 | 381,853                | 4.42                              |
| 13-May-87 | 401,727                | 4.65                              |
| 14-May-87 | 448,334                | 5.19                              |
| 15-May-87 | 374,756                | 4.34                              |
| 16-May-87 | 389,424                | 4.51                              |
| 17-May-87 | 350,624                | 4.06                              |
| 18-May-87 | 338,558                | 3.92                              |
| 19-May-87 | 323,653                | 3.75                              |
| 20-May-87 | 322,233                | 3.73                              |
| 21-May-87 | 309,457                | 3.58                              |
| 22-May-87 | 299,284                | 3.46                              |
| 23-May-87 | 292,423                | 3.38                              |
| 24-May-87 | 15,615                 | 0.18                              |
| 25-May-87 | MISSING DATA           |                                   |
| 26-May-87 | 8,517                  | 0.10                              |
| 27-May-87 | 121,606                | 1.41                              |
| 28-May-87 | 282,723                | 3.27                              |
| 29-May-87 | 308,748                | 3.57                              |
| 30-May-87 | 316,555                | 3.66                              |
| 31-May-87 | 302,360                | 3.50                              |
| 01-Jun-87 | 251,257                | 2.91                              |
| 02-Jun-87 | 258,591                | 2.99                              |
| 03-Jun-87 | 265,452                | 3.07                              |
| 04-Jun-87 | 257,881                | 2.98                              |
| 05-Jun-87 | 303,306                | 3.51                              |
| 06-Jun-87 | 318,448                | 3.69                              |
| 07-Jun-87 | 333,589                | 3.86                              |
| 08-Jun-87 | 323,416                | 3.74                              |
| 09-Jun-87 | 281,303                | 3.26                              |
| 10-Jun-87 | 272,550                | 3.15                              |
| 11-Jun-87 | 272,550                | 3.15                              |
| 12-Jun-87 | 129,177                | 1.50                              |
| 13-Jun-87 | 113,562                | 1.31                              |
| 14-Jun-87 | 113,562                | 1.31                              |

## BURLINGTON LANDFILL LEACHATE FLOW RATES

=====

OCTOBER 1986 TO DECEMBER 1987

| DATE      | DAILY<br>VOLUME<br>(L) | MEAN<br>DAILY<br>DISCHARGE<br>L/s |
|-----------|------------------------|-----------------------------------|
| 15-Jun-87 | 113,562                | 1.31                              |
| 16-Jun-87 | 113,562                | 1.31                              |
| 17-Jun-87 | 113,562                | 1.31                              |
| 18-Jun-87 | 123,499                | 1.43                              |
| 19-Jun-87 | 149,287                | 1.73                              |
| 20-Jun-87 | 143,372                | 1.66                              |
| 21-Jun-87 | 153,073                | 1.77                              |
| 22-Jun-87 | 618,560                | 7.16                              |
| 23-Jun-87 | 157,568                | 1.82                              |
| 24-Jun-87 | 229,964                | 2.66                              |
| 25-Jun-87 | 130,597                | 1.51                              |
| 26-Jun-87 | 145,975                | 1.69                              |
| 27-Jun-87 | 113,562                | 1.31                              |
| 28-Jun-87 | 113,562                | 1.31                              |
| 29-Jun-87 | 113,562                | 1.31                              |
| 30-Jun-87 | 113,562                | 1.31                              |
| 01-Jul-87 | 113,562                | 1.31                              |
| 02-Jul-87 | 113,562                | 1.31                              |
| 03-Jul-87 | 136,748                | 1.58                              |
| 04-Jul-87 | 127,758                | 1.48                              |
| 05-Jul-87 | 124,919                | 1.45                              |
| 06-Jul-87 | 124,919                | 1.45                              |
| 07-Jul-87 | 124,919                | 1.45                              |
| 08-Jul-87 | 124,919                | 1.45                              |
| 09-Jul-87 | 124,919                | 1.45                              |
| 10-Jul-87 | 119,950                | 1.39                              |
| 11-Jul-87 | 123,499                | 1.43                              |
| 12-Jul-87 | 127,758                | 1.48                              |
| 13-Jul-87 | 212,456                | 2.46                              |
| 14-Jul-87 | 317,028                | 3.67                              |
| 15-Jul-87 | 170,343                | 1.97                              |
| 16-Jul-87 | 158,987                | 1.84                              |
| 17-Jul-87 | 148,104                | 1.71                              |
| 18-Jul-87 | 171,526                | 1.99                              |
| 19-Jul-87 | 221,446                | 2.56                              |
| 20-Jul-87 | 338,794                | 3.92                              |
| 21-Jul-87 | 260,957                | 3.02                              |
| 22-Jul-87 | 234,648                | 2.72                              |
| 23-Jul-87 | 202,709                | 2.35                              |
| 24-Jul-87 | 339,504                | 3.93                              |
| 25-Jul-87 | 305,199                | 3.53                              |
| 26-Jul-87 | 144,319                | 1.67                              |
| 27-Jul-87 | 155,675                | 1.80                              |
| 28-Jul-87 | 113,562                | 1.31                              |
| 29-Jul-87 | 113,562                | 1.31                              |
| 30-Jul-87 | 113,562                | 1.31                              |
| 31-Jul-87 | 119,240                | 1.38                              |
| 01-Aug-87 | 122,079                | 1.41                              |
| 02-Aug-87 | 317,265                | 3.67                              |
| 03-Aug-87 | 155,202                | 1.80                              |

BURLINGTON LANDFILL LEACHATE FLOW RATES

OCTOBER 1986 TO DECEMBER 1987

MEAN  
DAILY  
DISCHARGE  
VOLUME  
(L)  
L/S

|           |              |      |
|-----------|--------------|------|
| 04-Aug-87 | 17,034       | 0.20 |
| 05-Aug-87 | MISSING DATA |      |
| 06-Aug-87 | 123,026      | 1.42 |
| 07-Aug-87 | 185,958      | 2.15 |
| 08-Aug-87 | 170,343      | 1.97 |
| 09-Aug-87 | 422,073      | 4.89 |
| 10-Aug-87 | 278,228      | 3.22 |
| 11-Aug-87 | 235,642      | 2.73 |
| 12-Aug-87 | 190,217      | 2.20 |
| 13-Aug-87 | 193,056      | 2.23 |
| 14-Aug-87 | 178,861      | 2.07 |
| 15-Aug-87 | 149,051      | 1.73 |
| 16-Aug-87 | 136,275      | 1.58 |
| 17-Aug-87 | 146,921      | 1.70 |
| 18-Aug-87 | 153,782      | 1.78 |
| 19-Aug-87 | 152,836      | 1.77 |
| 20-Aug-87 | 147,631      | 1.71 |
| 21-Aug-87 | 147,394      | 1.71 |
| 22-Aug-87 | 149,997      | 1.74 |
| 23-Aug-87 | 143,609      | 1.66 |
| 24-Aug-87 | 149,051      | 1.73 |
| 25-Aug-87 | 159,934      | 1.85 |
| 26-Aug-87 | 175,548      | 2.03 |
| 27-Aug-87 | 174,602      | 2.02 |
| 28-Aug-87 | 173,183      | 2.00 |
| 29-Aug-87 | 178,151      | 2.06 |
| 30-Aug-87 | 191,636      | 2.22 |
| 31-Aug-87 | 227,361      | 2.63 |
| 01-Sep-87 | 190,217      | 2.20 |
| 02-Sep-87 | 161,826      | 1.87 |
| 03-Sep-87 | 161,826      | 1.87 |
| 04-Sep-87 | 162,536      | 1.88 |
| 05-Sep-87 | 158,987      | 1.84 |
| 06-Sep-87 | 170,343      | 1.97 |
| 07-Sep-87 | 154,729      | 1.79 |
| 08-Sep-87 | 180,990      | 2.09 |
| 09-Sep-87 | 146,685      | 1.70 |
| 10-Sep-87 | 78,074       | 0.90 |
| 11-Sep-87 | 167,978      | 1.94 |
| 12-Sep-87 | 158,987      | 1.84 |
| 13-Sep-87 | 157,095      | 1.82 |
| 14-Sep-87 | 149,287      | 1.73 |
| 15-Sep-87 | 166,085      | 1.92 |
| 16-Sep-87 | 153,309      | 1.77 |
| 17-Sep-87 | 167,268      | 1.94 |
| 18-Sep-87 | 233,512      | 2.70 |
| 19-Sep-87 | 189,034      | 2.19 |
| 20-Sep-87 | 144,792      | 1.68 |
| 21-Sep-87 | 148,577      | 1.72 |
| 22-Sep-87 | 147,394      | 1.71 |

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BURLINGTON LANDFILL LEACHATE FLOW RATES

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OCTOBER 1986 TO DECEMBER 1987

MEAN  
DAILY  
DAILY DISCHARGE  
VOLUME (L)  
L/S

|           |              |       |
|-----------|--------------|-------|
| 23-Sep-87 | 129,177      | 1.50  |
| 24-Sep-87 | 133,436      | 1.54  |
| 25-Sep-87 | 158,987      | 1.84  |
| 26-Sep-87 | 161,826      | 1.87  |
| 27-Sep-87 | 156,148      | 1.81  |
| 28-Sep-87 | 168,924      | 1.96  |
| 29-Sep-87 | 190,690      | 2.21  |
| 30-Sep-87 | 222,866      | 2.58  |
| 01-Oct-87 | 162,773      | 1.88  |
| 02-Oct-87 | 163,246      | 1.89  |
| 03-Oct-87 | 202,519      | 2.34  |
| 04-Oct-87 | 222,156      | 2.57  |
| 05-Oct-87 | 191,873      | 2.22  |
| 06-Oct-87 | 162,536      | 1.88  |
| 07-Oct-87 | MISSING DATA |       |
| 08-Oct-87 | MISSING DATA |       |
| 09-Oct-87 | 83,752       | 0.97  |
| 10-Oct-87 | 222,866      | 2.58  |
| 11-Oct-87 | 239,427      | 2.77  |
| 12-Oct-87 | 238,481      | 2.76  |
| 13-Oct-87 | 247,708      | 2.87  |
| 14-Oct-87 | 303,779      | 3.52  |
| 15-Oct-87 | 463,949      | 5.37  |
| 16-Oct-87 | 1,824,094    | 21.11 |
| 17-Oct-87 | 2,271,246    | 26.29 |
| 18-Oct-87 | 2,271,246    | 26.29 |
| 19-Oct-87 | 2,271,246    | 26.29 |
| 20-Oct-87 | 2,271,246    | 26.29 |
| 21-Oct-87 | 2,271,246    | 26.29 |
| 22-Oct-87 | 2,010,053    | 23.26 |
| 23-Oct-87 | 1,653,514    | 19.14 |
| 24-Oct-87 | 309,694      | 3.58  |
| 25-Oct-87 | 39,274       | 0.45  |
| 26-Oct-87 | MISSING DATA |       |
| 27-Oct-87 | 196,368      | 2.27  |
| 28-Oct-87 | 289,111      | 3.35  |
| 29-Oct-87 | 308,038      | 3.57  |
| 30-Oct-87 | 216,951      | 2.51  |
| 31-Oct-87 | 295,262      | 3.42  |
| 01-Nov-87 | 295,972      | 3.43  |
| 02-Nov-87 | 241,793      | 2.80  |
| 03-Nov-87 | 240,610      | 2.78  |
| 04-Nov-87 | 124,682      | 1.44  |
| 05-Nov-87 | MISSING DATA |       |
| 06-Nov-87 | 138,641      | 1.60  |
| 07-Nov-87 | 244,159      | 2.83  |
| 08-Nov-87 | 229,254      | 2.65  |
| 09-Nov-87 | 206,305      | 2.39  |
| 10-Nov-87 | 221,446      | 2.56  |
| 11-Nov-87 | 246,998      | 2.86  |

TABLE 1 FALCON CREEK STREAMFLOW DATA  
BURLINGTON L.F. 11/83 - 12/87

|       | DATE  | PRECIP | H    | Q (L/S) |
|-------|-------|--------|------|---------|
| ===== |       |        |      |         |
| 1984  | 10/24 |        | 0.00 | 0.0     |
|       | 10/26 |        | 0.00 | 0.0     |
|       | 10/29 |        | 0.00 | 0.0     |
|       | 10/31 |        | 0.00 | 0.0     |
|       | 11/02 |        | 0.00 | 0.0     |
|       | 11/05 |        | 0.09 | 3.4     |
|       | 11/07 |        | 0.04 | 0.4     |
|       | 11/09 |        | 0.02 | 0.1     |
|       | 11/12 |        | 0.08 | 2.5     |
|       | 11/14 |        | 0.06 | 1.2     |
|       | 11/16 |        | 0.07 | 1.8     |
|       | 11/19 |        | 0.06 | 1.2     |
|       | 11/21 |        | 0.05 | 0.8     |
|       | 11/23 |        | 0.05 | 0.8     |
|       | 11/26 |        | 0.06 | 1.2     |
|       | 11/28 |        | 0.06 | 1.2     |
|       | 11/30 |        | 0.06 | 1.2     |
|       | 12/03 |        | 0.10 | 4.4     |
|       | 12/05 |        | 0.06 | 1.2     |
|       | 12/07 |        |      |         |
|       | 12/10 |        | 0.08 | 2.5     |
|       | 12/12 |        | 0.10 | 4.4     |
|       | 12/14 |        | 0.10 | 4.4     |
|       | 12/17 |        | 0.10 | 4.4     |
|       | 12/19 |        | 0.09 | 3.4     |
|       | 12/21 |        |      |         |
|       | 12/24 |        | 0.17 | 16.4    |
|       | 12/28 |        | 0.16 | 14.1    |
|       | 12/31 |        | 0.21 | 27.9    |
| 1985  | 01/01 |        |      |         |
|       | 01/09 |        |      |         |
|       | 01/11 |        |      |         |
|       | 01/14 |        |      |         |
|       | 01/16 |        |      |         |
|       | 01/21 |        |      |         |
|       | 01/23 |        |      |         |
|       | 01/25 |        |      |         |
|       | 01/28 |        |      |         |
|       | 01/30 |        |      |         |
|       | 02/01 |        |      |         |
|       | 02/04 |        |      |         |
|       | 02/06 |        |      |         |
|       | 02/08 |        |      |         |
|       | 02/11 |        |      |         |
|       | 02/13 |        |      |         |
|       | 02/15 |        |      |         |
|       | 02/18 |        |      |         |
|       | 02/20 |        |      |         |

TABLE 1 FALCON CREEK STREAMFLOW DATA  
BURLINGTON L.F. 11/83 - 12/87

|       | DATE  | PRECIP | H    | Q (L/S) |
|-------|-------|--------|------|---------|
| ===== |       |        |      |         |
| 1985  | 02/22 |        |      |         |
|       | 02/25 |        | 0.47 | 236.8   |
|       | 02/27 |        | 0.35 | 95.0    |
|       | 03/01 |        | 0.30 | 68.0    |
|       | 03/04 |        |      |         |
|       | 03/06 |        |      |         |
|       | 03/08 |        | 0.42 | 168.2   |
|       | 03/11 |        | 0.37 | 112.6   |
|       | 03/13 |        | 0.38 | 122.5   |
|       | 03/15 |        | 0.35 | 95.0    |
|       | 03/18 |        | 0.27 | 52.3    |
|       | 03/20 |        | 0.24 | 38.9    |
|       | 03/22 |        | 0.23 | 35.0    |
|       | 03/25 |        | 0.25 | 43.1    |
|       | 03/27 |        | 0.27 | 52.3    |
|       | 04/01 |        | 0.28 | 57.2    |
|       | 04/03 |        | 0.23 | 35.0    |
|       | 04/08 |        | 0.11 | 5.5     |
|       | 04/10 |        | 0.11 | 5.5     |
|       | 04/12 |        | 0.11 | 5.5     |
|       | 04/15 |        | 0.11 | 5.5     |
|       | 04/17 |        | 0.11 | 5.5     |
|       | 04/19 |        | 0.11 | 5.5     |
|       | 04/22 |        | 0.11 | 5.5     |
|       | 04/24 |        | 0.11 | 5.5     |
|       | 04/26 |        | 0.11 | 5.5     |
|       | 04/29 |        | 0.11 | 5.5     |
|       | 05/01 |        | 0.10 | 4.4     |
|       | 05/03 |        | 0.09 | 3.4     |
|       | 05/06 |        | 0.08 | 2.5     |
|       | 05/08 |        | 0.08 | 2.5     |
|       | 05/10 |        | 0.08 | 2.5     |
|       | 05/13 |        | 0.05 | 0.8     |
|       | 05/15 |        | 0.05 | 0.8     |
|       | 05/17 |        | 0.08 | 2.1     |
|       | 05/21 |        | 0.08 | 2.5     |
|       | 05/22 |        | 0.08 | 2.1     |
|       | 05/27 |        | 0.09 | 3.4     |
|       | 05/29 |        | 0.06 | 1.2     |
|       | 05/31 |        | 0.08 | 2.5     |
|       | 06/03 |        | 0.05 | 0.8     |
|       | 06/05 |        | 0.04 | 0.4     |
|       | 06/07 |        | 0.04 | 0.4     |
|       | 06/10 |        | 0.04 | 0.4     |
|       | 06/12 |        | 0.06 | 1.2     |
|       | 06/14 |        | 0.06 | 1.2     |
|       | 06/17 |        | 0.06 | 1.2     |
|       | 06/19 |        | 0.07 | 1.5     |

TABLE 1 FALCON CREEK STREAMFLOW DATA  
BURLINGTON L.F. 11/83 - 12/87

|       | DATE  | PRECIP | H    | Q (L/S) |
|-------|-------|--------|------|---------|
| ===== |       |        |      |         |
| 1985  | 06/21 |        | 0.05 | 0.8     |
|       | 06/24 |        | 0.05 | 0.8     |
|       | 06/26 |        | 0.05 | 0.8     |
|       | 07/02 |        |      |         |
|       | 07/08 |        | 0.12 | 6.3     |
|       | 07/10 |        | 0.05 | 0.8     |
|       | 07/12 |        | 0.04 | 0.4     |
|       | 07/15 |        | 0.04 | 0.4     |
|       | 07/17 |        | 0.04 | 0.4     |
|       | 07/22 |        | 0.02 | 0.1     |
|       | 07/24 |        |      |         |
|       | 07/26 |        |      |         |
|       | 07/29 |        |      |         |
|       | 07/31 |        |      |         |
|       | 08/06 |        |      |         |
|       | 08/07 |        |      |         |
|       | 08/09 |        |      |         |
|       | 08/12 |        |      |         |
|       | 08/14 |        |      |         |
|       | 08/16 |        |      |         |
|       | 08/21 |        |      |         |
|       | 08/23 |        |      |         |
|       | 08/26 |        | 0.04 | 0.4     |
|       | 08/28 |        | 0.02 | 0.1     |
|       | 08/30 |        |      |         |
|       | 09/03 |        | 0.01 | 0.01    |
|       | 09/05 |        | 0.02 | 0.1     |
|       | 09/09 |        | 0.01 | 0.01    |
|       | 09/16 |        |      |         |
|       | 09/17 |        |      |         |
|       | 09/18 |        |      |         |
|       | 09/20 |        |      |         |
|       | 09/23 |        |      |         |
|       | 09/30 |        |      |         |
|       | 10/02 |        |      |         |
|       | 10/04 |        |      |         |
|       | 10/07 |        |      |         |
|       | 10/17 |        |      |         |
|       | 10/18 |        |      |         |
|       | 10/21 |        | 0.04 | 0.4     |
|       | 10/25 |        | 0.05 | 0.8     |
|       | 10/28 |        | 0.03 | 0.2     |
|       | 10/30 |        | 0.04 | 0.4     |
|       | 11/04 |        | 0.22 | 31.3    |
|       | 11/06 |        | 0.22 | 31.3    |
|       | 11/08 |        | 0.02 | 0.04    |
|       | 11/13 |        | 0.32 | 75.6    |
|       | 11/18 |        | 0.23 | 35.0    |

TABLE 1 FALCON CREEK STREAMFLOW DATA  
BURLINGTON L.F. 11/83 - 12/87

|       | DATE  | PRECIP | H    | Q (L/S) |
|-------|-------|--------|------|---------|
| ===== |       |        |      |         |
| 1985  | 11/20 |        | 0.23 | 33.9    |
|       | 11/26 |        | 0.12 | 6.6     |
|       | 11/29 |        | 0.18 | 19.0    |
|       | 12/02 |        | 0.33 | 81.0    |
|       | 12/04 |        | 0.12 | 6.2     |
|       | 12/09 |        | 0.12 | 6.3     |
|       | 12/11 |        | 0.22 | 31.3    |
|       | 12/13 |        |      |         |
|       | 12/16 |        |      |         |
|       | 12/18 |        |      |         |
|       | 12/27 |        |      |         |
| 1986  | 01/02 | 2.2    |      |         |
|       | 01/03 | 2.8    |      |         |
|       | 01/04 | 1.8    |      |         |
|       | 01/05 | 1.0    |      |         |
|       | 01/07 | T      |      |         |
|       | 01/12 | 0.4    |      |         |
|       | 01/13 | 0.4    |      |         |
|       | 01/14 | 0.6    |      |         |
|       | 01/17 | 4.0    |      |         |
|       | 01/18 | 0.4    |      |         |
|       | 01/19 | 14.0   |      |         |
|       | 01/20 | 0.2    |      |         |
|       | 01/22 | T      |      |         |
|       | 01/24 | T      |      |         |
|       | 01/25 | 1.0    |      |         |
|       | 01/26 | 0.4    |      |         |
|       | 01/27 | 3.4    |      |         |
|       | 01/28 | 0.2    |      |         |
|       | 01/29 | 0.4    |      |         |
|       | 02/01 | 18.0   |      |         |
|       | 02/04 | 19.3   |      |         |
|       | 02/05 | 0.2    |      |         |
|       | 02/06 | 0.2    |      |         |
|       | 02/07 | 1.6    |      |         |
|       | 02/08 | 1.2    |      |         |
|       | 02/09 | 0.4    |      |         |
|       | 02/13 | T      |      |         |
|       | 02/14 | 0.6    |      |         |
|       | 02/15 | 0.4    |      |         |
|       | 02/16 | 7.2    |      |         |
|       | 02/17 | 1.2    |      |         |
|       | 02/18 | 0.2    |      |         |
|       | 02/19 | 0.2    |      |         |
|       | 02/20 | 12.0   |      |         |
|       | 02/21 | T      |      |         |
|       | 02/22 | T      |      |         |
|       | 02/23 | T      |      |         |

TABLE 1 FALCON CREEK STREAMFLOW DATA  
BURLINGTON L.F. 11/83 - 12/87

|       | DATE  | PRECIP | H    | Q (L/S) |
|-------|-------|--------|------|---------|
| ===== |       |        |      |         |
| 1986  | 02/25 | T      |      |         |
|       | 02/27 | 0.4    |      |         |
|       | 02/28 | T      |      |         |
|       | 03/03 | 0.8    |      |         |
|       | 03/05 | 5.8    |      |         |
|       | 03/06 | 5.0    |      |         |
|       | 03/08 | 0.6    |      |         |
|       | 03/09 | 6.0    |      |         |
|       | 03/10 | 3.8    |      |         |
|       | 03/12 | 12.4   |      |         |
|       | 03/13 | 6.0    |      |         |
|       | 03/14 | 0.2    |      |         |
|       | 03/15 | T      |      |         |
|       | 03/18 | 13.8   |      |         |
|       | 03/19 | T      |      |         |
|       | 03/22 | 0.2    |      |         |
|       | 03/23 | 0.6    |      |         |
|       | 03/24 |        | 0.24 | 38.9    |
|       | 03/26 | 9.9    |      |         |
|       | 03/26 |        | 0.25 | 43.1    |
|       | 03/30 | T      |      |         |
|       | 03/31 |        | 0.18 | 19.0    |
|       | 04/01 | 0.4    |      |         |
|       | 04/01 |        | 0.17 | 16.4    |
|       | 04/03 | 1.8    |      |         |
|       | 04/04 | 0.4    |      |         |
|       | 04/05 | 13.2   |      |         |
|       | 04/06 | T      |      |         |
|       | 04/07 | 1.4    |      |         |
|       | 04/08 | T      |      |         |
|       | 04/09 |        | 0.16 | 14.1    |
|       | 04/09 | T      |      |         |
|       | 04/10 | 2.0    |      |         |
|       | 04/11 | 1.4    |      |         |
|       | 04/14 |        | 0.13 | 8.4     |
|       | 04/14 | 4.1    |      |         |
|       | 04/15 | 13.4   |      |         |
|       | 04/16 | 8.4    |      |         |
|       | 04/16 |        | 0.3  | 68.0    |
|       | 04/18 |        | 0.19 | 21.7    |
|       | 04/20 | 15.8   |      |         |
|       | 04/21 |        | 0.31 | 71.9    |
|       | 04/21 | 0.8    |      |         |
|       | 04/23 |        | 0.18 | 19.0    |
|       | 04/25 |        | 0.17 | 16.4    |
|       | 04/28 |        | 0.14 | 10.1    |
|       | 04/29 | T      | 0.15 | 12.0    |
|       | 04/30 |        | 0.14 | 10.1    |

TABLE 1 FALCON CREEK STREAMFLOW DATA  
BURLINGTON L.F. 11/83 - 12/87

|       | DATE  | PRECIP | H    | Q (L/S) |
|-------|-------|--------|------|---------|
| ===== |       |        |      |         |
| 1986  | 05/01 | 1.0    |      |         |
|       | 05/02 |        | 0.12 | 6.9     |
|       | 05/05 |        | 0.14 | 10.1    |
|       | 05/06 | 3.2    |      |         |
|       | 05/07 |        | 0.14 | 10.1    |
|       | 05/08 |        | 0.05 | 0.8     |
|       | 05/09 |        | 0.13 | 8.4     |
|       | 05/12 |        | 0.12 | 6.9     |
|       | 05/14 |        | 0.13 | 8.4     |
|       | 05/14 | 2.8    |      |         |
|       | 05/15 | 9.6    |      |         |
|       | 05/16 |        | 0.17 | 16.4    |
|       | 05/16 | 0.4    |      |         |
|       | 05/17 | 0.2    |      |         |
|       | 05/18 | 23.2   |      |         |
|       | 05/19 | 9.8    |      |         |
|       | 05/20 |        | 0.28 | 57.2    |
|       | 05/20 | 12.2   |      |         |
|       | 05/22 | 6.0    |      |         |
|       | 05/23 | 11.0   |      |         |
|       | 05/26 |        | 0.18 | 19.0    |
|       | 05/28 |        | 0.16 | 14.1    |
|       | 05/30 |        | 0.14 | 10.1    |
|       | 06/01 | 8.8    |      |         |
|       | 06/02 |        | 0.14 | 10.1    |
|       | 06/04 |        | 0.13 | 8.4     |
|       | 06/05 | 13.2   |      |         |
|       | 06/06 |        | 0.14 | 10.1    |
|       | 06/07 | 11.2   |      |         |
|       | 06/09 |        | 0.12 | 6.9     |
|       | 06/11 |        | 0.12 | 6.9     |
|       | 06/11 | 18.6   |      |         |
|       | 06/12 | 0.4    |      |         |
|       | 06/13 |        | 0.14 | 10.1    |
|       | 06/14 | 0.2    |      |         |
|       | 06/15 | 0.2    |      |         |
|       | 06/16 | 12.6   |      |         |
|       | 06/16 |        | 0.12 | 6.9     |
|       | 06/18 |        | 0.12 | 6.9     |
|       | 06/19 | 0.4    |      |         |
|       | 06/20 |        | 0.12 | 6.9     |
|       | 06/21 | 1.2    |      |         |
|       | 06/22 | 1.6    |      |         |
|       | 06/23 |        | 0.12 | 6.9     |
|       | 06/23 | 5.6    |      |         |
|       | 06/25 |        | 0.12 | 6.9     |
|       | 06/27 | 8.4    |      |         |
|       | 06/27 |        | 0.12 | 6.9     |

TABLE 1 FALCON CREEK STREAMFLOW DATA  
BURLINGTON L.F. 11/83 - 12/87

|       | DATE  | PRECIP | H    | Q (L/S) |
|-------|-------|--------|------|---------|
| ===== |       |        |      |         |
| 1986  | 06/29 | 0.8    |      |         |
|       | 06/30 |        | 0.12 | 6.9     |
|       | 07/01 | 5.6    |      |         |
|       | 07/02 |        | 0.12 | 6.9     |
|       | 07/04 | 0.4    | 0.01 | 0.0     |
|       | 07/07 | 4.2    |      |         |
|       | 07/08 | T      |      |         |
|       | 07/11 | 14.8   |      |         |
|       | 07/12 | 5.2    |      |         |
|       | 07/13 | 4.2    |      |         |
|       | 07/14 |        | 0.12 | 6.9     |
|       | 07/17 |        | 0    | 0.0     |
|       | 07/17 | 33.4   |      |         |
|       | 07/18 | 18.8   |      |         |
|       | 07/19 | 2.6    |      |         |
|       | 07/21 |        | 0.12 | 6.9     |
|       | 07/22 |        | 0    | 0.0     |
|       | 07/23 |        | 0    | 0.0     |
|       | 07/24 |        | 0    | 0.0     |
|       | 07/25 |        | 0    | 0.0     |
|       | 07/25 | 9.2    |      |         |
|       | 07/28 |        | 0    | 0.0     |
|       | 07/31 | T      |      |         |
|       | 08/01 | 0.4    |      |         |
|       | 08/01 |        | 0    | 0.0     |
|       | 08/02 | 9.4    |      |         |
|       | 08/03 | 2.4    |      |         |
|       | 08/04 | T      |      |         |
|       | 08/05 | 0.2    |      |         |
|       | 08/06 |        | 0    | 0.0     |
|       | 08/06 | 23.4   |      |         |
|       | 08/07 | 21.4   |      |         |
|       | 08/08 | 2.0    |      |         |
|       | 08/10 | 24.0   |      |         |
|       | 08/14 | 2.8    |      |         |
|       | 08/15 | 8.4    |      |         |
|       | 08/18 |        | 0    | 0.0     |
|       | 08/21 | 0.6    |      |         |
|       | 08/22 | 7.2    |      |         |
|       | 08/23 | 3.8    |      |         |
|       | 08/25 | T      |      |         |
|       | 08/26 | 16.4   |      |         |
|       | 08/28 | 1.2    |      |         |
|       | 09/04 | 3.0    |      |         |
|       | 09/06 | 0.2    |      |         |
|       | 09/09 | T      |      |         |
|       | 09/10 | 43.8   | 0    | 0       |
|       | 09/11 | 10.2   |      |         |

TABLE 1 FALCON CREEK STREAMFLOW DATA  
BURLINGTON L.F. 11/83 - 12/87

|      | DATE  | PRECIP | H    | Q (L/S) |
|------|-------|--------|------|---------|
| 1986 | 09/12 | 0.4    |      |         |
|      | 09/13 | T      |      |         |
|      | 09/14 | 2.4    |      |         |
|      | 09/15 | 26.4   |      |         |
|      | 09/16 | 0.2    |      |         |
|      | 09/19 | 4.4    |      |         |
|      | 09/20 | 0.6    |      |         |
|      | 09/21 | 2.6    |      |         |
|      | 09/22 | 7.3    |      |         |
|      | 09/23 | 0.6    |      |         |
|      | 09/25 | 0.8    |      |         |
|      | 09/26 | 4.2    |      |         |
|      | 09/27 | T      |      |         |
|      | 09/28 | 6.0    |      |         |
|      | 09/29 | 27.8   |      |         |
|      | 09/30 | 3.2    |      |         |
|      | 10/01 | 3.2    |      |         |
|      | 10/02 | 2.6    |      |         |
|      | 10/03 | 3.6    |      |         |
|      | 10/04 | 9.6    |      |         |
|      | 10/05 | 2.4    |      |         |
|      | 10/06 | T      |      |         |
|      | 10/08 | 3.2    |      |         |
|      | 10/10 | 0.2    |      |         |
|      | 10/12 | 6.2    |      |         |
|      | 10/13 | 13.2   |      |         |
|      | 10/14 | 0.4    |      |         |
|      | 10/15 | T      |      |         |
|      | 10/16 | 0.8    |      |         |
|      | 10/17 | 0.2    |      |         |
|      | 10/25 | 0.8    |      |         |
|      | 10/26 | 1.2    |      |         |
|      | 10/27 | 11.4   |      |         |
|      | 10/29 | 0.6    |      |         |
|      | 11/01 | 8.6    |      |         |
|      | 11/03 | 1.2    |      |         |
|      | 11/07 | 2.2    |      |         |
|      | 11/08 | 4.0    |      |         |
|      | 11/10 | 0.6    |      |         |
|      | 11/11 | 3.0    |      |         |
|      | 11/12 | 0.8    |      |         |
|      | 11/13 | T      |      |         |
|      | 11/19 | 1.6    |      |         |
|      | 11/20 | 19.4   |      |         |
|      | 11/23 | 1.0    |      |         |
|      | 11/25 | 9.2    |      |         |
|      | 11/26 | 22.0   |      |         |
|      | 11/26 |        | 0.42 | 168.2   |

TABLE 1 FALCON CREEK STREAMFLOW DATA  
BURLINGTON L.F. 11/83 - 12/87

|      | DATE  | PRECIP | H    | Q (L/S) |
|------|-------|--------|------|---------|
| 1986 | 12/01 | 2.4    |      |         |
|      | 12/02 | 14.6   |      |         |
|      | 12/03 | 1.0    |      |         |
|      | 12/03 |        | 0.35 | 95.0    |
|      | 12/04 | 0.4    |      |         |
|      | 12/06 | 0.8    |      |         |
|      | 12/07 | 5.2    |      |         |
|      | 12/08 | 7.2    |      |         |
|      | 12/08 |        | 0.2  | 24.7    |
|      | 12/09 | 20.4   |      |         |
|      | 12/10 |        | 0.3  | 68.0    |
|      | 12/11 | 0.4    |      |         |
|      | 12/12 |        | 0.3  | 68.0    |
|      | 12/12 | T      |      |         |
|      | 12/14 | T      |      |         |
|      | 12/17 | 12.8   |      |         |
|      | 12/18 | 1.8    |      |         |
|      | 12/19 |        | 0.3  | 68.0    |
|      | 12/22 |        | 0.2  | 24.7    |
|      | 12/24 | 24.2   |      |         |
|      | 12/25 | 0.4    |      |         |
|      | 12/26 | T      |      |         |
|      | 12/27 | T      |      |         |
|      | 12/29 |        | 0.2  | 24.7    |
|      | 12/30 | T      |      |         |
|      | 12/31 | T      |      |         |
| 1987 | 01/01 | 3.6    |      |         |
|      | 01/02 | 3.8    |      |         |
|      | 01/03 |        |      |         |
|      | 01/04 |        |      |         |
|      | 01/05 |        | 0.2  | 24.7    |
|      | 01/06 |        |      |         |
|      | 01/07 |        | 0.2  | 24.7    |
|      | 01/08 | 9      |      |         |
|      | 01/09 | 4.6    | 0.23 | 35.0    |
|      | 01/10 | 0.6    |      |         |
|      | 01/12 |        |      |         |
|      | 01/13 |        |      |         |
|      | 01/14 | 1.8    | 0.24 | 38.9    |
|      | 01/15 | 0.2    |      |         |
|      | 01/16 | 0.2    | 0.25 | 43.1    |
|      | 01/17 | 4      |      |         |
|      | 01/18 | 2.8    |      |         |
|      | 01/19 | 16.8   |      |         |
|      | 01/20 | 0.2    |      |         |
|      | 01/21 |        | 0.25 | 43.1    |
|      | 01/22 | 1.8    |      |         |

TABLE 1 FALCON CREEK STREAMFLOW DATA  
BURLINGTON L.F. 11/83 - 12/87

|      | DATE  | PRECIP | H    | Q (L/S) |
|------|-------|--------|------|---------|
| 1987 | 01/23 | 0.2    | 0.25 | 43.1    |
|      | 01/24 |        |      |         |
|      | 01/25 |        |      |         |
|      | 01/26 |        | 0.33 | 81.0    |
|      | 01/27 |        |      |         |
|      | 01/28 |        | 0.33 | 81.0    |
|      | 01/29 | 5.8    |      |         |
|      | 01/30 | 3.6    | 0.33 | 81.0    |
|      | 01/31 |        |      |         |
|      | 02/01 |        |      |         |
|      | 02/02 | 2.2    | 0.33 | 81.0    |
|      | 02/03 |        |      |         |
|      | 02/04 | 0.8    | 0.33 | 81.0    |
|      | 02/05 |        |      |         |
|      | 02/06 |        | 0.33 | 81.0    |
|      | 02/07 | 4      |      |         |
|      | 02/08 |        |      |         |
|      | 02/09 |        | 0.33 | 81.0    |
|      | 02/09 |        |      |         |
|      | 02/11 |        | 0.33 | 81.0    |
|      | 02/12 |        |      |         |
|      | 02/13 |        | 0.33 | 81.0    |
|      | 02/14 | 0.6    |      |         |
|      | 02/15 |        |      |         |
|      | 02/16 |        | 0.33 | 81.0    |
|      | 02/17 |        |      |         |
|      | 02/18 |        |      |         |
|      | 02/19 |        |      |         |
|      | 02/20 |        |      |         |
|      | 02/21 |        |      |         |
|      | 02/22 |        |      |         |
|      | 02/23 |        | 0.33 | 81.0    |
|      | 02/24 |        |      |         |
|      | 02/25 |        | 0.33 | 81.0    |
|      | 02/26 |        |      |         |
|      | 02/27 | 0.2    |      |         |
|      | 02/28 | 17.8   |      |         |
|      | 03/01 | 11.4   |      |         |
|      | 03/02 |        | 0.37 | 112.6   |
|      | 03/03 |        |      |         |
|      | 03/04 |        | 0.34 | 87.5    |
|      | 03/05 |        |      |         |
|      | 03/06 |        | 0.32 | 75.6    |
|      | 03/07 |        |      |         |
|      | 03/08 |        |      |         |
|      | 03/09 |        | 0.3  | 68.0    |
|      | 03/10 |        |      |         |
|      | 03/11 |        | 0.24 | 38.9    |

TABLE 1 FALCON CREEK STREAMFLOW DATA  
BURLINGTON L.F. 11/83 - 12/87

|       | DATE  | PRECIP | H    | Q (L/S) |
|-------|-------|--------|------|---------|
| ===== |       |        |      |         |
| 1987  | 03/12 |        |      |         |
|       | 03/13 |        | 0.23 | 35.0    |
|       | 03/14 |        |      |         |
|       | 03/15 |        |      |         |
|       | 03/16 |        | 0.21 | 27.9    |
|       | 03/17 |        |      |         |
|       | 03/18 |        | 0.2  | 24.7    |
|       | 03/19 |        |      |         |
|       | 03/20 |        |      |         |
|       | 03/21 |        |      |         |
|       | 03/22 |        |      |         |
|       | 03/23 |        | 0.18 | 19.0    |
|       | 03/24 | 1.8    |      |         |
|       | 03/25 | 9.1    | 0.18 | 19.0    |
|       | 03/26 | 0.2    |      |         |
|       | 03/27 |        | 0.18 | 19.0    |
|       | 03/28 |        |      |         |
|       | 03/29 | 5.8    |      |         |
|       | 03/30 | 27.2   | 0.18 | 19.0    |
|       | 03/31 | 8.6    |      |         |
|       | 04/01 | 5.4    | 0.26 | 47.6    |
|       | 04/02 | 0.2    |      |         |
|       | 04/03 |        | 0.3  | 68.0    |
|       | 04/04 | 13.4   |      |         |
|       | 04/05 | 12.5   |      |         |
|       | 04/06 | 6.8    | 0.3  | 68.0    |
|       | 04/07 |        |      |         |
|       | 04/08 |        | 0.29 | 62.5    |
|       | 04/09 |        |      |         |
|       | 04/10 |        | 0.29 | 62.5    |
|       | 04/11 | 0.4    |      |         |
|       | 04/12 | 24.4   |      |         |
|       | 04/13 |        | 0.32 | 75.6    |
|       | 04/14 | 0.4    |      |         |
|       | 04/15 | 0.2    | 0.25 | 43.1    |
|       | 04/16 |        |      |         |
|       | 04/17 |        |      |         |
|       | 04/18 |        |      |         |
|       | 04/19 |        |      |         |
|       | 04/20 |        | 0.2  | 24.7    |
|       | 04/21 |        |      |         |
|       | 04/22 | 0.2    | 0.2  | 24.7    |
|       | 04/23 | 2.6    |      |         |
|       | 04/24 |        |      |         |
|       | 04/25 |        |      |         |
|       | 04/26 |        |      |         |
|       | 04/27 | 2.3    | 0.2  | 24.7    |
|       | 04/28 |        |      |         |

TABLE 1 FALCON CREEK STREAMFLOW DATA  
BURLINGTON L.F. 11/83 - 12/87

|      | DATE  | PRECIP | H   | Q (L/S) |
|------|-------|--------|-----|---------|
| 1987 | 04/29 |        | 0.2 | 24.7    |
|      | 04/30 |        |     |         |
|      | 05/01 |        | 0.2 | 24.7    |
|      | 05/02 |        |     |         |
|      | 05/03 |        |     |         |
|      | 05/04 |        | 0.2 | 24.7    |
|      | 05/05 |        |     |         |
|      | 05/06 |        | 0.2 | 24.7    |
|      | 05/07 |        |     |         |
|      | 05/08 |        |     |         |
|      | 05/09 |        |     |         |
|      | 05/10 | 2.5    |     |         |
|      | 05/11 |        | 0.2 | 24.7    |
|      | 05/12 |        |     |         |
|      | 05/13 |        | 0.2 | 24.7    |
|      | 05/14 | 11.9   |     |         |
|      | 05/15 |        |     |         |
|      | 05/16 |        |     |         |
|      | 05/17 | 0.6    |     |         |
|      | 05/18 | 4.8    |     |         |
|      | 05/19 | 2      |     |         |
|      | 05/20 |        |     |         |
|      | 05/21 |        |     |         |
|      | 05/22 | 4.2    |     |         |
|      | 05/23 |        |     |         |
|      | 05/24 |        |     |         |
|      | 05/25 |        |     |         |
|      | 05/26 | 1.4    |     |         |
|      | 05/27 | 11.6   |     |         |
|      | 05/28 |        |     |         |
|      | 05/29 |        |     |         |
|      | 05/30 | 1.4    |     |         |
|      | 05/31 |        |     |         |
|      | 06/01 |        | 0.2 | 24.7    |
|      | 06/02 | 0.4    |     |         |
|      | 06/03 | 0.6    | 0.2 | 24.7    |
|      | 06/04 |        |     |         |
|      | 06/05 | 0.6    | 0.2 | 24.7    |
|      | 06/06 |        |     |         |
|      | 06/07 | 1.8    |     |         |
|      | 06/08 | 2.8    | 0.2 | 24.7    |
|      | 06/09 |        |     |         |
|      | 06/10 |        | 0.2 | 24.7    |
|      | 06/11 | 4.8    |     |         |
|      | 06/12 |        | 0.2 | 24.7    |
|      | 06/13 |        |     |         |
|      | 06/14 |        |     |         |

TABLE 1 FALCON CREEK STREAMFLOW DATA  
BURLINGTON L.F. 11/83 - 12/87

|      | DATE  | PRECIP | H   | Q (L/S) |
|------|-------|--------|-----|---------|
| 1987 | 06/15 |        | 0.2 | 24.7    |
|      | 06/16 |        |     |         |
|      | 06/17 |        | 0.2 | 24.7    |
|      | 06/18 |        |     |         |
|      | 06/19 |        | 0.2 | 24.7    |
|      | 06/20 |        |     |         |
|      | 06/21 | 35.3   |     |         |
|      | 06/22 | 19.2   | 0.2 | 24.7    |
|      | 06/23 |        |     |         |
|      | 06/24 |        | 0.2 | 24.7    |
|      | 06/25 | 11.4   |     |         |
|      | 06/26 |        | 0.2 | 24.7    |
|      | 06/27 |        |     |         |
|      | 06/28 |        |     |         |
|      | 06/29 |        | 0.2 | 24.7    |
|      | 06/30 |        |     |         |
|      | 07/01 | 0.6    |     |         |
|      | 07/02 | 7      |     |         |
|      | 07/03 | 1.4    |     |         |
|      | 07/04 |        |     |         |
|      | 07/05 |        |     |         |
|      | 07/06 |        |     |         |
|      | 07/07 | 0.4    |     |         |
|      | 07/08 | 1      |     |         |
|      | 07/09 |        |     |         |
|      | 07/10 |        |     |         |
|      | 07/11 |        |     |         |
|      | 07/12 |        |     |         |
|      | 07/13 | 27     |     |         |
|      | 07/14 | 1      |     |         |
|      | 07/15 |        |     |         |
|      | 07/16 |        |     |         |
|      | 07/17 |        |     |         |
|      | 07/18 |        |     |         |
|      | 07/19 | 29.4   |     |         |
|      | 07/20 |        |     |         |
|      | 07/21 |        |     |         |
|      | 07/22 |        |     |         |
|      | 07/23 |        |     |         |
|      | 07/24 | 11     |     |         |
|      | 07/25 | 4.4    |     |         |
|      | 07/26 |        |     |         |
|      | 07/27 |        |     |         |
|      | 07/28 |        |     |         |
|      | 07/29 |        |     |         |
|      | 07/30 | 16.2   |     |         |
|      | 07/31 |        |     |         |

TABLE 1 FALCON CREEK STREAMFLOW DATA  
BURLINGTON L.F. 11/83 - 12/87

|       | DATE  | PRECIP | H | Q (L/S) |
|-------|-------|--------|---|---------|
| ===== |       |        |   |         |
| 1987  | 08/01 | 1.2    |   |         |
|       | 08/02 | 37.2   |   |         |
|       | 08/03 |        |   |         |
|       | 08/04 |        |   |         |
|       | 08/05 |        |   |         |
|       | 08/06 |        |   |         |
|       | 08/07 | 3.6    |   |         |
|       | 08/08 | 6.2    |   |         |
|       | 08/09 | 33.2   |   |         |
|       | 08/10 |        |   |         |
|       | 08/11 |        |   |         |
|       | 08/12 |        |   |         |
|       | 08/13 |        |   |         |
|       | 08/14 |        |   |         |
|       | 08/15 |        |   |         |
|       | 08/16 |        |   |         |
|       | 08/17 | 1      |   |         |
|       | 08/18 |        |   |         |
|       | 08/19 |        |   |         |
|       | 08/20 |        |   |         |
|       | 08/21 | 1      |   |         |
|       | 08/22 |        |   |         |
|       | 08/23 |        |   |         |
|       | 08/24 |        |   |         |
|       | 08/25 |        |   |         |
|       | 08/26 | 8.4    |   |         |
|       | 08/27 | 1.2    |   |         |
|       | 08/28 | 2.2    |   |         |
|       | 08/29 | 0.8    |   |         |
|       | 08/30 | 4.6    |   |         |
|       | 08/31 | 3.4    |   |         |
|       | 09/01 | 3.6    |   |         |
|       | 09/02 | 0.2    |   |         |
|       | 09/03 |        |   |         |
|       | 09/04 |        |   |         |
|       | 09/05 |        |   |         |
|       | 09/06 |        |   |         |
|       | 09/07 | 3.4    |   |         |
|       | 09/08 | 5.6    |   |         |
|       | 09/09 |        |   |         |
|       | 09/10 |        |   |         |
|       | 09/11 | 3.8    |   |         |
|       | 09/12 | 0.2    |   |         |
|       | 09/13 | 5.6    |   |         |
|       | 09/14 |        |   |         |
|       | 09/15 | 1.4    |   |         |
|       | 09/16 | 11.8   |   |         |
|       | 09/17 | 2.6    |   |         |

TABLE 1 FALCON CREEK STREAMFLOW DATA  
BURLINGTON L.F. 11/83 - 12/87

|      | DATE  | PRECIP | H | Q (L/S) |
|------|-------|--------|---|---------|
| 1987 | 09/18 | 4.8    |   |         |
|      | 09/19 | 4.0    |   |         |
|      | 09/20 | 2.8    |   |         |
|      | 09/21 |        |   |         |
|      | 09/22 |        |   |         |
|      | 09/23 |        |   |         |
|      | 09/24 |        |   |         |
|      | 09/25 |        |   |         |
|      | 09/26 |        |   |         |
|      | 09/27 | 1.6    |   |         |
|      | 09/28 |        |   |         |
|      | 09/29 | 2.6    |   |         |
|      | 09/30 | 0.8    |   |         |
|      | 10/01 | 1.8    |   |         |
|      | 10/02 | 2.2    |   |         |
|      | 10/03 |        |   |         |
|      | 10/04 |        |   |         |
|      | 10/05 | 0.4    |   |         |
|      | 10/06 | 3.8    |   |         |
|      | 10/07 | 7.8    |   |         |
|      | 10/08 |        |   |         |
|      | 10/09 |        |   |         |
|      | 10/10 | 0.4    |   |         |
|      | 10/11 |        |   |         |
|      | 10/12 |        |   |         |
|      | 10/13 |        |   |         |
|      | 10/14 |        |   |         |
|      | 10/15 |        |   |         |
|      | 10/16 | 0.2    |   |         |
|      | 10/17 | 5.0    |   |         |
|      | 10/18 |        |   |         |
|      | 10/19 |        |   |         |
|      | 10/20 | 0.2    |   |         |
|      | 10/21 | 7.2    |   |         |
|      | 10/22 | 7.8    |   |         |
|      | 10/23 |        |   |         |
|      | 10/24 | 10.0   |   |         |
|      | 10/25 |        |   |         |
|      | 10/26 | 2.4    |   |         |
|      | 10/27 | 5.4    |   |         |
|      | 10/28 |        |   |         |
|      | 10/29 |        |   |         |
|      | 10/30 |        |   |         |
|      | 10/31 |        |   |         |
|      | 11/01 | 0.2    |   |         |
|      | 11/02 | 0.8    |   |         |
|      | 11/03 | 0.6    |   |         |

TABLE 1 FALCON CREEK STREAMFLOW DATA  
BURLINGTON L.F. 11/83 - 12/87

|       | DATE  | PRECIP | H | Q (L/S) |
|-------|-------|--------|---|---------|
| ===== |       |        |   |         |
| 1987  | 11/04 |        |   |         |
|       | 11/05 | 1.4    |   |         |
|       | 11/06 |        |   |         |
|       | 11/07 | 2.8    |   |         |
|       | 11/08 | 4.2    |   |         |
|       | 11/09 |        |   |         |
|       | 11/10 |        |   |         |
|       | 11/11 |        |   |         |
|       | 11/12 |        |   |         |
|       | 11/13 | 1.8    |   |         |
|       | 11/14 |        |   |         |
|       | 11/15 |        |   |         |
|       | 11/16 |        |   |         |
|       | 11/17 | 6.6    |   |         |
|       | 11/18 |        |   |         |
|       | 11/19 | 0.4    |   |         |
|       | 11/20 | 0.8    |   |         |
|       | 11/21 |        |   |         |
|       | 11/22 |        |   |         |
|       | 11/23 | 0.4    |   |         |
|       | 11/24 | 9.0    |   |         |
|       | 11/25 | 36.4   |   |         |
|       | 11/26 |        |   |         |
|       | 11/27 |        |   |         |
|       | 11/28 | 16.6   |   |         |
|       | 11/29 | 7.0    |   |         |
|       | 11/30 | 0.8    |   |         |
|       | 12/01 | 1.4    |   |         |
|       | 12/02 |        |   |         |
|       | 12/03 | 3.6    |   |         |
|       | 12/04 |        |   |         |
|       | 12/05 |        |   |         |
|       | 12/06 |        |   |         |
|       | 12/07 | 0.6    |   |         |
|       | 12/08 | 1.4    |   |         |
|       | 12/09 | 4.0    |   |         |
|       | 12/10 |        |   |         |
|       | 12/11 | 3.2    |   |         |
|       | 12/12 | 1.2    |   |         |
|       | 12/13 |        |   |         |
|       | 12/14 | 4.2    |   |         |
|       | 12/15 | 27.4   |   |         |
|       | 12/16 |        |   |         |
|       | 12/17 |        |   |         |
|       | 12/18 |        |   |         |
|       | 12/19 | 12.2   |   |         |
|       | 12/20 | 2.6    |   |         |

TABLE 1      FALCON CREEK STREAMFLOW DATA  
BURLINGTON L.F. 11/83 - 12/87

|       | DATE  | PRECIP | H | Q (L/S) |
|-------|-------|--------|---|---------|
| ===== |       |        |   |         |
| 1987  | 12/21 |        |   |         |
|       | 12/22 | 1.0    |   |         |
|       | 12/23 |        |   |         |
|       | 12/24 | 1.4    |   |         |
|       | 12/25 |        |   |         |
|       | 12/26 |        |   |         |
|       | 12/27 | 1.0    |   |         |
|       | 12/28 |        |   |         |
|       | 12/29 |        |   |         |
|       | 12/30 |        |   |         |
|       | 12/31 |        |   |         |

WATER BALANCE CALCULATIONS  
FOR  
BURLINGTON LANDFILL  
FOR 1987

| MONTH | MEAN<br>TEMPERATURE<br>C | MEAN<br>PRECIPI-<br>TATION<br>mm | ACTUAL<br>EVAPOTRAN-<br>PIRATION<br>mm | ACTUAL<br>WATER<br>BALANCE<br>mm |
|-------|--------------------------|----------------------------------|----------------------------------------|----------------------------------|
| JAN   | -3.4                     | 59.0                             | 0                                      | 59                               |
| FEB   | -3.6                     | 25.6                             | 0                                      | 26                               |
| MAR   | 2.3                      | 64.1                             | 7                                      | 57                               |
| APR   | 8.9                      | 71.6                             | 41                                     | 30                               |
| MAY   | 15.4                     | 40.4                             | 49                                     | -9                               |
| JUN   | 20.6                     | 76.9                             | 78                                     | -1                               |
| JUL   | 23.5                     | 99.4                             | 99                                     | 0                                |
| AUG   | 20.7                     | 104.0                            | 104                                    | 0                                |
| SEP   | 16.8                     | 54.8                             | 55                                     | 0                                |
| OCT   | 8.1                      | 54.6                             | 31                                     | 24                               |
| NOV   | 4.7                      | 89.8                             | 14                                     | 76                               |
| DEC   | 0.6                      | 65.2                             | 1                                      | 64                               |
| YEAR  |                          | 805                              | 480                                    | 325                              |



**APPENDIX III**

LEACHATE ANALYSES INORGANIC AND ROUTINE WATER  
QUALITY PARAMETERS  
LEACHATE ANALYSES - VOLATILE ORGANICS  
LEACHATE ANALYSES - EXTRACTABLE ORGANICS, PCB  
AND PESTICIDES

BURLINGTON LANDFILL  
PROJECT 87-224  
LEACHATE ANALYSES - MOE LABORATORY

| STATION              | LAB    | DATE      | COND                | HARD          | ALK           | PH  | CHLORIDE   | TOTAL                 | DISSOLVED             | SUSPENDED             | IRON | PHOSPHOROUS          | SOLUBLE                 | TOTAL                               | AMMONIUM | NITRATES |
|----------------------|--------|-----------|---------------------|---------------|---------------|-----|------------|-----------------------|-----------------------|-----------------------|------|----------------------|-------------------------|-------------------------------------|----------|----------|
|                      |        |           | COND25<br>umho's/cm | CaCO3<br>mg/l | CaCO3<br>mg/l |     | Cl<br>mg/l | SOLIDS<br>RST<br>mg/l | SOLIDS<br>RSF<br>mg/l | SOLIDS<br>RSP<br>mg/l |      | (TOTAL)<br>P<br>mg/l | PHOSPHATES<br>P<br>mg/l | KJELDAHL<br>NITROGEN<br>TKN<br>mg/l |          |          |
| Toedrain<br>Leachate | MOE    | 22-May-85 | 10050               | 1040          | 3928          | 6.8 | 1368       | 8970                  | 8620                  | 351                   | 148  | 2.88                 |                         | 325                                 |          | 0.55     |
|                      | MOE    | 10-Jul-85 | 9020                | 3028          | 3676          | 6.8 | 1310       | 7770                  | 7640                  | 124                   | 48   | 1.00                 | 0.08                    |                                     | 300      | 0.55     |
|                      | MOE    | 17-Sep-85 | 11130               | 3571          | 4058          | 6.7 | 1457       | 9240                  | 9030                  | 204                   | 41   | 1.10                 | <.01                    | 385                                 | 328      | 0.80     |
|                      | MOE    | 13-Nov-85 | 4920                | 1830          | 1844          | 6.3 | 441        |                       |                       |                       |      | 0.90                 |                         | 108                                 | 100      | 0.40     |
|                      | MOE    | 20-Nov-85 | 5490                | 2120          | 2082          | 7.3 | 497        | 4800                  | 4300                  | 497                   | 17   | 1.25                 | <.01                    | 153                                 | 120      | 0.40     |
|                      | MOE    | 05-Dec-85 | 5940                | 2050          | 2210          | 6.8 | 631        |                       |                       |                       |      | 3.50                 |                         | 136                                 | 130      | 0.25     |
|                      | MOE    | 18-Dec-85 | 6300                | 1780          | 2270          | 7.3 | 779        |                       |                       |                       |      | 1.00                 |                         | 175                                 | 143      | 0.15     |
|                      | MOE    | 08-May-86 | 9050                | 1737          | 3100          | 7.7 | 819        | 7610                  | 7160                  | 450                   | 90   |                      | 0.17                    | 203                                 | 178      | 0.55     |
|                      | MOE    | 09-Jul-86 | 8900                | 3398          | 3508          | 7.0 | 1110       | 8946                  | 8616                  | 329                   | 140  | 1.50                 | 0.08                    | 268                                 | 237      | 0.10     |
|                      | MOE    | 10-Sep-86 | 9140                | 1230          |               | 6.8 |            | 8810                  | 8640                  | 165                   | 83   | 2.00                 | <.01                    | 283                                 | 5        | <.05     |
|                      | MOE    | 02-Dec-86 | 6120                | 2024          | 2476          | 7.6 | 677        |                       | 5070                  |                       | 53   | 0.20                 | <0.05                   | 154                                 | 140      | 0.75     |
|                      | MOE    | 12-May-87 | 6720                | 1421          | 223           | 7.2 | 873        |                       | 3690                  |                       | 12   | 0.25                 | 0.14                    | 152                                 | 152      | 0.45     |
|                      | MOE    | 18-Aug-87 | 7650                | 3180          | 3256          | 6.5 | 994        | 7460                  | 6900                  | 563                   | 24   | 0.80                 | 0.42                    | 229                                 | 198      | 0.70     |
|                      | HALTON | 18-Aug-87 | 6520                | 2760          | 2359          | 7.6 | 53         |                       |                       | 100                   | 87   | 0.85                 |                         |                                     | 155      | 0.32     |
|                      | MOE    | 20-Oct-87 | 9850                | 3710          | 3622          | 7.0 | 49         | 13400                 | 5220                  | 8130                  | 243  | 1.05                 | 2.43                    | 297                                 | 280      | 0.55     |
|                      | HALTON | 20-Oct-87 | 6500                | >1000         | 4330          | 7.1 | 1320       |                       |                       | 700                   | 410  | 0.51                 |                         | 176                                 | 280      | 13.90    |
|                      | HALTON | 01-Dec-87 | 3480                |               | 1306          | 7.2 | 97         |                       |                       | 521                   | 82   | 6.73                 |                         | 91                                  | 82       | 1.15     |

BURLINGTON LANDFILL  
PROJECT 87-224  
LEACHATE ANALYSES - MOE LABORATORY

| STATION  | LAB | DATE      | NITRITE<br>mg/l | PHENOLICS<br>ug/l | BOD5<br>mg/l | COD<br>mg/l | DOC<br>mg/l | DIC<br>mg/l | CALCIUM<br>mg/l | MAGNESIUM<br>mg/l | SODIUM<br>mg/l | POTASSIUM<br>mg/l | SULPHATE<br>mg/l | COPPER<br>mg/l | NICKEL<br>mg/l | LEAD<br>mg/l | ZINC<br>mg/l |
|----------|-----|-----------|-----------------|-------------------|--------------|-------------|-------------|-------------|-----------------|-------------------|----------------|-------------------|------------------|----------------|----------------|--------------|--------------|
| Toedrain | MOE | 22-May-85 | 0.08            | 2140              | >3835        | 7560        | 1950        | 615         |                 |                   |                |                   |                  |                |                |              |              |
| Leachate | MOE | 10-Jul-85 | 0.11            | 1600              | 3000         | 4900        | 1700        | 660         |                 |                   |                |                   |                  |                |                |              |              |
|          | MOE | 17-Sep-85 | 0.09            | 18                | 9860         |             | 1990        | 610         |                 |                   |                |                   |                  |                |                |              |              |
|          | MOE | 13-Nov-85 | 0.09            |                   | 2830         | 3718        | 730         |             | 432             | 182               | 290            | 138               | 76               |                |                |              |              |
|          | MOE | 20-Nov-85 | 0.11            | 1440              | 18           | 4726        | 1450        | 370         |                 |                   |                |                   |                  |                |                |              |              |
|          | MOE | 05-Dec-85 | 0.07            | 810               | 1925         | 2160        | 910         |             | 432             | 235               | 380            | 182               | 40               |                |                |              |              |
|          | MOE | 18-Dec-85 | 0.04            | 775               | 2360         |             |             |             | 250             | 280               | 102            | 107               | 22               |                |                |              |              |
|          | MOE | 08-May-86 | 0.07            | 1980              | 4330         |             | 1690        | 255         |                 |                   |                |                   |                  | 0.53           | 0.08           | <0.03        | 5.4          |
|          | MOE | 09-Jul-86 | 0.17            | 2360              | 1440         |             | 2250        | 302         |                 |                   |                |                   |                  | 0.024          | 0.089          | 0.041        | 6.1          |
|          | MOE | 10-Sep-86 | <.005           | 3                 | 4500         | 114         |             |             |                 |                   |                |                   |                  | <0.05          | 0.1            | <0.15        | 4.4          |
|          | MOE | 02-Dec-86 | 0.03            | 1290              |              | 16330       | 1160        | 294         |                 |                   |                |                   |                  | <0.050         | <0.050         | <0.150       | 1.6          |
|          | MOE | 12-May-87 | 0.05            | 400               |              | <2          | 260         | 440         |                 |                   |                |                   |                  | <.005          | 0.031          | <.015        | 0.080        |
|          | MOE | 18-Aug-87 | 0.12            | 1540              | 1500         | 4830        | 1480        | 495         |                 |                   |                |                   |                  | <.005          | 0.092          | 0.072        | 1.700        |
| HALTON   | MOE | 18-Aug-87 | 0.04            | 355               | 412          | 4949        | 437         | 94          |                 |                   |                |                   |                  | <.3            | <.6            | <.1          | 5.300        |
|          | MOE | 20-Oct-87 | 0.10            |                   | 6000         | 5376        | 2500        | 540         |                 |                   |                |                   |                  | 0.170          | 0.160          | 0.490        | 12.000       |
| HALTON   | MOE | 20-Oct-87 | <.02            | 102               | 406          | 8601        |             |             |                 |                   |                |                   |                  | 0.400          | 0.160          | 0.800        | 22.000       |
| HALTON   | MOE | 01-Dec-87 | 0.13            | 3400              | 16           | 3460        |             |             |                 |                   |                |                   |                  |                |                |              |              |

BURLINGTON LANDFILL  
PROJECT 87-224  
LEACHATE ANALYSES - MOE LABORATORY

| =====    |        |           |           |          |                  |
|----------|--------|-----------|-----------|----------|------------------|
| STATION  | LAB    | DATE      | MANGANESE | ALUMINUM | CADMIUM CHROMIUM |
|          |        |           | mg/l      | mg/l     | mg/l mg/l        |
| =====    |        |           |           |          |                  |
| Toedrain | MOE    | 22-May-85 |           |          |                  |
| Leachate | MOE    | 10-Jul-85 |           |          |                  |
|          | MOE    | 17-Sep-85 |           |          |                  |
|          | MOE    | 13-Nov-85 |           |          |                  |
|          | MOE    | 20-Nov-85 |           |          |                  |
|          | MOE    | 05-Dec-85 |           |          |                  |
|          | MOE    | 18-Dec-85 |           |          |                  |
|          | MOE    | 08-May-86 | 8.0       | 0.97     | 0.005 0.26       |
|          | MOE    | 09-Jul-86 | 9.9       | 0.56     | 0.003 0.28       |
|          | MOE    | 10-Sep-86 | 8.8       | 0.49     | <0.015 0.27      |
|          | MOE    | 02-Dec-86 | 5.6       | <0.15    | <0.015 0.33      |
|          | MOE    | 12-May-87 | 1.400     |          | <.0020 0.044     |
|          | MOE    | 18-Aug-87 | 5.900     | 0.960    | 0.0100 0.390     |
|          | HALTON | 18-Aug-87 | 7.200     | 0.400    | <.1 <.6          |
|          | MOE    | 20-Oct-87 | 9.800     | 7.600    | 0.0260 0.760     |
|          | HALTON | 20-Oct-87 |           | 70.000   | 0.1000 0.600     |
|          | HALTON | 01-Dec-87 |           |          |                  |
| -----    |        |           |           |          |                  |

Table 4 : Volatile Organic Concentrations in Leachate

PROJECT: 87-224 BURLINGTON LANDFILL

Burlington Landfill Volatile Organic Concentrations in Leachate  
Samples Collected from the Toe-drain. Results in ug/L.

(blank space indicates below detection)

|                               | 1984   |        | 1985   |        |        |        |        |        |        | 1986   |        |        | 1987   |        |        |        |        |                |  |
|-------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|----------------|--|
|                               | 09-Apr | 21-Aug | 22-May | 10-Jul | 17-Sep | 13-Nov | 20-Nov | 05-Dec | 18-Dec | 08-May | 10-Sep | 02-Dec | 12-May | 18-Aug | 20-Oct | 20-Oct | 01-Dec | 01-Dec         |  |
| PARAMETER                     | MOE    | MOE    | MOE    | MOE    | MOE    | MOE    | MOE    | MOE    | MOE    | MOE    | MOE    | MOE    | MOE    | MOE    | MOE    | Mann   | Mann   | Repeat<br>Mann |  |
| :1,1-Dichloroethylene         |        |        |        |        |        |        |        |        |        |        | <100   |        |        | <100   | <10    | <1     | <1     | <1             |  |
| :Dichloromethane              |        |        | 1800   | 2300   | 1870   | 914    | 300    | 328    |        | 1010   | 280    | 495    | 26     | <100   | 337    | 16270  | 169    | 119            |  |
| :TRS-1, 2-Dichloroethylene    |        |        | 3      |        |        |        |        |        | 1      |        | <100   |        | <2     | <100   | <10    | <1     | <1     | <1             |  |
| :1, 1-Dichloroethane          |        |        | 330    | 220    | 230    | 175    | 61     | 61     | 11     | 53     | <100   | 62     | <2     | 245    | 122    | 3370   | 49     | 47             |  |
| :Chloroform                   |        |        |        |        |        |        |        |        |        |        | <100   |        | <2     | <100   | <10    | <1     | <1     | <1             |  |
| :1, 1, 1-Trichloroethane      |        |        | 62     |        | 160    | 236    | 4      | 28     |        |        | <100   |        | <2     | <100   | <10    | <1     | <1     | <1             |  |
| :1, 2-Dichloroethane          |        |        |        |        | 40     | 15     |        |        |        |        | <100   |        | <2     | <100   | <10    | 166    | 2      | 2              |  |
| :Carbontetrachloride          |        |        |        |        |        |        |        |        |        |        | <100   |        | <2     | <100   | <10    | <1     | <1     | <1             |  |
| :Benzene                      |        | 20     | 15     | 14     | 19     | 29     | 7      |        | 3      |        | <100   |        | 3      | <100   | 58     | 238    | 7      | 7              |  |
| :1, 2-Dichloropropane         |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        | <1     | <1     | <1             |  |
| :Trichloroethylene            |        |        | 11     |        | 40     |        |        |        | 13     |        | <100   | 71     | 11     | 137    | <10    | 582    | 6      | 7              |  |
| :Dichlorobromomethane         |        |        |        |        |        |        |        |        |        |        | <100   |        | <2     | <100   | <10    | <1     | <1     | <1             |  |
| :Toluene                      | 100    | 900    | 490    | 500    | 570    | 1060   | 276    | 310    | 43     | 630    | 7513   | 390    | 20     | 467    | 296    | 7000   | 173    | 191            |  |
| :1, 1, 2-Trichloroethane      |        |        |        |        |        |        |        |        |        |        | <1     |        | <2     | <100   | <10    | <1     | <1     | <1             |  |
| :Chlorodibromoethane          |        |        |        |        |        |        |        |        |        |        | <100   |        | <2     | <100   | <10    | <1     | <1     | <1             |  |
| :Tetrachloroethylene          |        |        | 11     | 20     |        | 13     | 23     |        |        |        | <100   |        | <2     | <100   | <10    | 80     | 1      | 1              |  |
| :Chlorobenzene                |        |        | 7      |        |        | 50     | 14     |        | 4      |        | <100   |        | 2      | <100   | 188    | <1     | 8      | 8              |  |
| :Ethylbenzene                 |        | 80     | 50     | 83     | 50     | 125    | 42     | 26     | 9      | 36     | <100   | 40     | 3      | 129    | 22     | 790    | 36     | 36             |  |
| :M- and p-Xylene              |        | 250    | 197    | 250    | 200    | 360    | 151    | 116    | 25     | 220    | 205    | 158    | <1     | 377    | 61     | 2350   | 101    | 119            |  |
| :Bromoform                    |        |        |        |        |        |        |        |        |        |        | <100   |        | <2     | <100   | <10    | <1     | <1     | <1             |  |
| :O-Xylene                     |        | 80     | 168    | 120    | 180    | 155    | 159    | 55     | 10     | 52     | <100   | 50     | 7      | 148    | 19     | 1290   | 57     | 56             |  |
| :1, 1, 2, 2-Tetrachloroethane |        |        |        |        |        |        |        |        |        |        | <100   |        | <2     | <100   | <10    | <1     | <1     | <1             |  |
| :1, 4-Dichlorobenzene         |        |        |        |        |        |        |        |        |        |        | <100   |        | <2     | <100   | <10    | 122    | 4      | 4              |  |
| :1, 3-Dichlorobenzene         |        |        |        |        |        |        |        |        |        |        | <100   |        | <2     | <100   | <10    | <1     | <1     | <1             |  |
| :1, 2-Dichlorobenzene         |        | 20     |        | 5      |        |        |        |        |        |        | <100   |        | <2     | <1     | <10    | <1     | <1     | <1             |  |
| :Vinylchloride                |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        | 2010   | 71     | 71             |  |
| :Cis-1,2-Dichloroethylene     |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        | 2080   | 283    | 299            |  |
| :2-Butanone                   |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        | 104    | 93             |  |
| :Styrene                      |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        | 95     |        |                |  |
| :THF                          |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        | 11     | 11             |  |

PROJECT: 87-224

BURLINGTON LANDFILL LEACHATE

EXTRACTIBLE ORGANICS - results in ug/L

| PARAMETER                 | 1986   |        | 1987   |        |        |        |
|---------------------------|--------|--------|--------|--------|--------|--------|
|                           | 08-May | 10-Sep | 12-May | 18-Aug | 20-Oct | 01-Dec |
|                           | MOE    | MOE    | MOE    | MOE    | MOE    | MANN   |
| Acenaphthylene            | MS     | <1.    | <1     | <1     | <1     | <40    |
| 2,6-Dinitrotoluene        | MS     | <2.    | <2     | <1     | <1     | <80    |
| Acenaphthene              | MS     | <1.    | <1     | <1     | 5      | <40    |
| 4-Chlorophenylphenylether | MS     | <1.    | <1     | <1     | <1     |        |
| 2,4-Dinitrotoluene        | MS     | <2.    | <2     | <2     | <2     | <80    |
| Diethyl Phthalate         | MS     | <1.    | <1     | IAW    |        | 64     |
| 2-Chloroethylvinylether   | MS     | INP    | INP    | IAW    |        |        |
| Fluorene                  | MS     | <1.    | <1     | <1     | <1     | <40    |
| N-Nitrosodiphenylamine    | MS     | <2.    | <2     | <1     | <1     | <160   |
| 4-Bromophenylphenylether  | MS     | <1.    | <1     | <1     | <1     | <40    |
| Phenanthrene              | MS     | <1.    | <1     | <1     | 15     | <40    |
| Anthracene                | MS     | <1.    | <1     | <1     | 10     | <40    |
| Di-isobutylphthalate      | MS     | <1.    | <1     | IAW    |        |        |
| Di-n-butylphthalate       | MS     | <1.    | <1     | 3      | <1     | <40    |
| Flouranthene              | MS     | <1.    | <1     | <1     | 9      | <40    |
| Pyrene                    | MS     | <1.    | <1     | <1     | <1     | <80    |
| Butylbenzylphthalate      | MS     | INP    | INP    | <1     | <1     | <80    |
| Benzo(a)anthracene        | MS     | <1.    | <1     | <2     | <2     | <80    |
| Chrysene                  | MS     | <1.    | <1     | <1     | 3      | <80    |
| Bis-2-ethylhexylphthalat  | MS     | 30.    | <5     | <5     | <5     | 148    |

PROJECT: 87-224  
 BURLINGTON LANDFILL LEACHATE  
 EXTRACTIBLE ORGANICS - results in ug/L

| PARAMETER              | 1986   |        | 1987   |        |        |        |
|------------------------|--------|--------|--------|--------|--------|--------|
|                        | 08-May | 10-Sep | 12-May | 18-Aug | 20-Oct | 01-Dec |
|                        | MOE    | MOE    | MOE    | MOE    | MOE    | MANN   |
| Di-n-octylphthalate    | MS     | <1.    | <1     | <2     | <2     | <80    |
| Benzo(k)fluoranthene   | MS     | <1.    | <1     | <5     | 7      | <80    |
| Benzo(b)fluoranthene   | MS     | <1.    | <1     | <5     |        | <80    |
| Benzo(a)pyrene         | MS     | <1.    | <1     | <2     | <2     | <80    |
| Indeno(1,2,3-cd)pyrene | MS     | <1.    | <1     | <1     | <1     | <80    |
| 2,4,6,Trichlorophenol  | MS     | <1.    | 1      | <1     | <1     | <80    |
| 2345 Tetrachlorophenol | MS     | <1.    | 1      | <1     | <1     |        |
| Pentachlorophenol      | MS     | <1.    | 7      | <1     | <1     | <80    |

NOTES : MS - referred to Mass Spectroscopy Laboratory,  
 see report attached.

!NP - No appropriate procedure available

!QU - Quality controls unacceptable

!AW - Analysis withdrawn by Lab.

PROJECT: 87-224  
 BURLINGTON LANDFILL LEACHATE  
 EXTRACTIBLE ORGANICS - results in ug/L

| PARAMETER                | 1986   |        | 1987   |        |        |        |
|--------------------------|--------|--------|--------|--------|--------|--------|
|                          | 08-May | 10-Sep | 12-May | 18-Aug | 20-Oct | 20-Oct |
|                          | MOE    | MOE    | MOE    | MOE    | MOE    | MANN   |
| PCB Total                | <.02   | <.02   | <.02   | <.02   | <.020  | <.5    |
| Hexachlorobenzene        | <.001  | <.001  | 0.003  | 0.065  | <.02   |        |
| Heptachlor               | <.001  | <.001  | <.001  | 0.042  | <.02   |        |
| Aldrin                   | <.001  | <.001  | <.001  | <.001  | <.02   |        |
| PP-DDE                   | <.001  | <.001  | 0.030  | 0.066  | <.02   |        |
| Mirex                    | <.005  | <.005  | <.005  | 0.030  | <.02   |        |
| A-BHC Hexachlorocyclohex | <.001  | <.001  | <.001  | 0.014  | <.02   |        |
| B-BHC Hexachlorocyclohex | <.001  | <.001  | <.001  | <.001  | <.02   |        |
| G-BHC Hexachlorocyclohex | <.001  | 0.020  | 0.001  | 0.016  | <.02   |        |
| A-Chlordane              | 0.005  | 0.015  | 0.058  | 0.106  | <.02   |        |
| G-Chlordane              | <.002  | 0.015  | 0.079  | 0.108  | <.02   |        |
| Oxychlordane             | <.002  | <.002  | <.002  | 0.048  | <.02   |        |
| OP-DDT                   | <.002  | <.005  | <.005  | 0.030  | <.02   |        |
| PP-DDD                   | <.005  | <.005  | <.005  | 0.050  | <.02   |        |
| PP-DDT                   | <.005  | <.005  | <.005  | 0.040  | <.02   |        |
| DMDT Methoxychlor        | <.005  | <.004  | 0.1    | 1.0    | <.02   |        |
| Heptachlorepoxyde        | <.001  | <.002  | <.002  | 0.021  | <.02   |        |
| Endosulfan I             | <.002  | <.002  | <.002  | 0.020  | <.02   |        |
| Dieldrin                 | <.002  | <.004  | <.004  | 0.046  | <.02   |        |
| Endrin                   | <.004  | <.004  | <.004  | 0.014  | <.02   |        |
| Endosulfan II            | <.004  | <.004  | <.004  | 0.028  | <.02   |        |
| Endosulfan Sulphate      | <.004  | <.004  | <.004  | 0.054  | <.02   |        |



**APPENDIX IV**

**GROUND WATER ANALYSES - INORGANIC AND ROUTINE  
WATER QUALITY PARAMETERS  
GROUND WATER ANALYSES - VOLATILE ORGANICS**

BURLINGTON LANDFILL  
GLAL 87-224  
GROUND WATER - ROUTINE PARAMETERS

1985 - 1986 analyses at MOE Laboratory  
1987 analyses at Halton Region Laboratory

| STATION | DATE      | CONDUCTIVITY        | HARDNESS        | ALKALINITY      | PH  | CHLORIDE   | TOTAL<br>KJELDAHL<br>NITROGEN | AMMONIUM    | PHENOLICS | BOD5 | COD  |
|---------|-----------|---------------------|-----------------|-----------------|-----|------------|-------------------------------|-------------|-----------|------|------|
|         |           | COND25<br>umho's/cm | (CaCO3)<br>mg/L | (CaCO3)<br>mg/L |     | CL<br>mg/L | TKN<br>mg/L                   | NH4<br>mg/L | ug/L      | mg/L | mg/L |
| 12-II   | 14-Nov-85 | 4310                | 1920            | 743             | 6.8 | 349        | 1.5                           | <.05        | 1.4       | 1    | 34   |
|         | 29-Jul-86 | 4180                | 2094            | 727             | 7.5 | 347        | 1.2                           | 0.7         | 0.8       | 2    |      |
|         | 14-Sep-87 | 2790                | 2326            | 622             | 6.9 | 600        | 0.4                           |             | <1        | <1   | 2302 |
|         | 26-Nov-87 | 3010                | 2021            | 685             | 7.1 | 590        | 1.0                           | 0.20        | 2.8       | 13   | 44   |
| 13-II   | 14-Nov-85 | 2000                | 689             | 375             | 7.4 | 301        |                               | 1.4         | <1        | 7    | 34   |
|         | 29-Jul-86 | 1880                | 622             | 794             | 8.1 | 307        | 1.2                           | 0.7         | <1        | 4    |      |
|         | 14-Sep-87 | 1300                | 707             | 368             | 7.3 | 500        | 0.1                           |             | 2.0       | 6    | 2041 |
|         | 26-Nov-87 | 1400                | 755             | 370             | 7.5 | 445        | 0.2                           | <.01        | 2.7       | <1   | 14   |
| 14-I    | 14-Nov-85 | 7250                | 2000            | 114             | 7.2 | 1585       | 4.7                           | <.05        | 2.8       | 3    | 84   |
|         | 29-Jul-86 | 7200                | 1057            | 115             | 8.1 | 1612       | 4.6                           | 2.8         | 2.6       | 2    |      |
|         | 14-Sep-87 | 5280                | 2287            | 224             | 7.4 | 2110       | 2.0                           |             | 2.0       | 2    | 109  |
|         | 26-Nov-87 | 5000                | 2061            | 340             | 7.4 | 1510       | 4.7                           | 3.45        | 1.3       | 5    | 91   |
| 14-II   | 14-Nov-85 | 2950                | 1200            | 537             | 7.0 | 220        | 0.3                           | <.05        | <1        | 1    | 24   |
|         | 29-Jul-86 | 2670                | 1222            | 527             | 8.1 | 232        | 1.0                           | <.05        | <1        | 5    |      |
|         | 14-Sep-87 | 2040                | 1153            | 1780            | 9.1 | 630        | <.1                           |             | 3.0       | 6    | 3741 |
|         | 26-Nov-87 | 2000                | 1321            | 820             | 7.2 | 370        | 0.6                           | <.01        | 1.8       | 5    | 53   |
| 15-I    | 14-Nov-85 | 4460                | 1230            | 241             | 7.0 | 1155       | 3.0                           | <.05        | <1        | 7    | 68   |
|         | 29-Jul-86 | 4310                | 976             | 195             | 8.0 | 1105       | 3.2                           | 2.7         | 2.4       | 6    |      |
|         | 14-Sep-87 | 3140                | 1211            | 730             | 9.2 | 1370       | 1.6                           |             | <1        | 3    | 35   |
|         | 26-Nov-87 | 3200                | 1282            | 520             | 7.2 | 1210       | 3.5                           | 1.78        | 2.7       | 6    | 75   |
| 15-II   | 14-Nov-85 | 1970                | 733             | 396             | 7.1 | 189        | 0.6                           | <.05        | <1        | 1    | 16   |
|         | 29-Jul-86 | 2340                | 709             | 573             | 7.8 | 380        | 1.0                           | 0.1         | 1.0       | 7    |      |
|         | 14-Sep-87 | 1900                | 766             | 388             | 8.3 | 730        | 0.1                           |             | <1        | 5    | 2962 |
|         | 26-Nov-87 | 1700                | 818             | 500             | 7.5 | 440        | 0.7                           | <.01        | 3.2       | 4    | 30   |

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GLAL 87-224  
GROUND WATER - ROUTINE PARAMETERS

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| STATION | DATE      | CONDUCTIVITY        | HARDNESS        | ALKALINITY      | PH  | CHLORIDE   | TOTAL<br>KJELDAHL<br>NITROGEN | AMMONIUM    | PHENOLICS | BOD5 | COD  |
|---------|-----------|---------------------|-----------------|-----------------|-----|------------|-------------------------------|-------------|-----------|------|------|
|         |           | COND25<br>umho's/cm | (CaCO3)<br>mg/L | (CaCO3)<br>mg/L |     | CL<br>mg/L | TKN<br>mg/L                   | NH4<br>mg/L | ug/L      | mg/L | mg/L |
| 16-I    | 26-Nov-87 | 2380                | 8913            | 57              | 7.2 | 15780      | 16.0                          | 17.24       | 2.5       | 6    | 704  |
| 16-II   | 26-Nov-87 | 2810                | 12877           | 46              | 7.0 | 21100      | 21.2                          | 20.35       | 2.7       | 5    | 642  |
| 16-III  | 26-Nov-87 | 2880                | 17324           | 49              | 7.4 | 23725      | 21.1                          | 20.44       | 3.8       | 6    | 1009 |
| 16-IV   | 14-Nov-85 | 2780                | 899             | 470             | 7.0 | 283        | 0.5                           | <.05        | 0.6       | <1   | 20   |
|         | 29-Jul-86 | 3090                | 997             | 529             | 7.8 | 322        | 0.2                           | <.05        | 0.8       | 3    |      |
|         | 14-Sep-87 | 1690                | 795             | 1314            | 8.1 | 500        | <.1                           |             | <1        | 3    | <10  |
|         | 26-Nov-87 | 2080                | 1282            | 485             | 7.2 | 550        | 0.4                           | <.01        | 2.2       | 10   | <10  |
| 18-II   | 19-Dec-85 | 2980                | 938             | 569             | 7.3 | 376        | 3.7                           | 2.3         |           | 3    |      |
|         | 29-Jul-86 | 1600                | 617             | 642             | 7.7 | 113        | 1.2                           | 0.8         | <1        | 6    |      |
|         | 14-Sep-87 | 1750                | 1647            | 461             | 7.4 | 490        | 0.5                           |             | 9.0       | 22   | 5820 |
|         | 26-Nov-87 | 2100                | 1065            | 600             | 7.3 | 455        | 1.4                           | <.01        | 9.2       | 8    | 47   |
| 18-III  | 19-Dec-85 | 935                 | 534             | 502             | 7.2 | 6          | 1.0                           | <.05        |           | 4    |      |
|         | 29-Jul-86 | 954                 | 490             | 373             | 8.1 | 20         | 1.0                           | <.05        | <1        | 3    |      |
|         | 26-Nov-87 | 700                 | 542             | 540             | 7.3 | 240        | 0.4                           | <.01        | 2.2       | 6    | 43   |
| 21-I    | 29-Jul-86 | 4220                | 2260            | 177             | 8.1 | 10         | 8.8                           | 7.7         | 5.0       | 24   |      |
|         | 14-Sep-87 | 2880                | 2102            | 144             | 8.2 | 865        | 2.0                           |             | <1        | 7    | 119  |
|         | 26-Nov-87 | 3000                | 1799            | 94              | 7.8 | 240        | 3.4                           | 1.94        | <0.1      | 7    | 36   |
| 21-II   | 14-Sep-87 | 1210                | 1182            | 576             | 8.3 | 625        | 0.3                           |             | 3.0       | 43   | 728  |
|         | 26-Nov-87 | 1300                | 1183            | 680             | 8.2 | 105        | 1.5                           | <.01        | 1.7       | 1    | 22   |
| 21-III  | 29-Jul-86 | 4220                | 310             | 160             | 8.0 | 3          | 2.5                           | <.05        | <1        | 16   |      |
|         | 26-Nov-87 | 500                 | 641             | 620             | 7.8 | 100        | 0.6                           | <.01        | <0.1      | 2    | <10  |
| 22-I    | 29-Jul-86 | 2110                | 470             | 483             | 8.5 | 15         | 3.4                           | 2.4         | 3.2       | 32   |      |
|         | 14-Sep-87 | 1080                | 359             | 570             | 8.2 | 1160       | 1.2                           |             | 3.0       | 39   | 97   |
|         | 26-Nov-87 | -                   | -               | -               | -   | -          | -                             | -           | <0.1      |      |      |
| 22-II   | 29-Jul-86 | 911                 | 517             | 462             | 7.9 | 7          | 0.4                           | 0.1         | <1        | 7    |      |
|         | 14-Sep-87 | 590                 | 630             | 470             | 7.3 | 290        | <.1                           |             | <1        | 34   | 1575 |
|         | 26-Nov-87 | 700                 | 611             | 780             | 7.5 | 145        | 0.4                           | <.01        | <0.1      | 5    | <10  |
| 22-III  | 29-Jul-86 | 779                 | 423             | 349             | 8.2 | 6          | 1.0                           | <.05        | <1        | 5    |      |
|         | 14-Sep-87 | 710                 | 533             | 1066            | 8.3 | 390        | <.1                           |             | 1.0       | 3    |      |
|         | 26-Nov-87 | 700                 | 680             | 710             | 7.5 | 150        | 0.5                           | <.01        | <0.1      | <1   | <10  |

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| STATION | DATE      | CONDUCTIVITY        | HARDNESS        | ALKALINITY      | PH  | CHLORIDE   | TOTAL<br>KJELDAHL<br>NITROGEN | AMMONIUM    | PHENOLICS | BOD5 | COD  |
|---------|-----------|---------------------|-----------------|-----------------|-----|------------|-------------------------------|-------------|-----------|------|------|
|         |           | COND25<br>umho's/cm | (CaCO3)<br>mg/L | (CaCO3)<br>mg/L |     | CL<br>mg/L | TKN<br>mg/L                   | NH4<br>mg/L | ug/L      | mg/L | mg/L |
| 23-I    | 05-Dec-85 | 3340                | 1140            | 371             | 8.6 | 7          |                               | 4.0         | 0.6       | 4    | 300  |
|         | 18-Dec-85 | 3330                | 267             | 246             | 7.1 | 7          | 2.9                           | 1.6         | 1.6       | 2    |      |
|         | 29-Jul-86 | 3220                | 1406            | 99              | 8.4 | 12         | 2.6                           | 2.2         | 2.4       | 2    |      |
|         | 14-Sep-87 | 2260                | 1812            | 276             | 7.6 | 230        | 1.0                           |             | 2.0       | 44   | 2209 |
|         | 26-Nov-87 | 2410                | 1528            | 259             | 7.7 | 250        | 1.9                           | 0.89        | 2.3       | 9    | 88   |
|         | 01-Dec-87 |                     |                 |                 |     |            |                               |             | 0.9       |      |      |
|         | 07-Dec-87 |                     |                 |                 |     |            |                               |             | 6.5       |      |      |
| 23-II   | 05-Dec-85 | 1620                | 718             | 805             | 7.4 | 2          | 1.7                           | 1.2         | <1        | 3    | 42   |
|         | 18-Dec-85 | 1583                | 722             | 839             | 8.1 | 1          | 1.5                           | 1.0         | <1        | 2    |      |
|         | 29-Jul-86 | 1320                | 705             | 753             | 8.4 | 3          | 2.0                           | <.05        | <1        | 31   |      |
|         | 14-Sep-87 | 950                 | 775             | 718             | 7.2 | 230        | 0.3                           |             | 2.0       | 75   | 160  |
|         | 26-Nov-87 | 1010                | 598             | 631             | 7.5 | 110        | 0.8                           | <.01        | 1.8       | 12   | <10  |
|         | 01-Dec-87 |                     |                 |                 |     |            |                               |             | 1.4       |      |      |
|         | 07-Dec-87 |                     |                 |                 |     |            |                               |             | 5.7       |      |      |
| 23-III  | 13-Nov-85 | 959                 | 516             | 493             | 7.4 | 5          | 0.5                           | 0.1         | 41.0      | 4    | 16   |
|         | 05-Dec-85 | 941                 | 466             | 487             | 7.2 | 3          | 0.3                           | 0.1         | 7.8       | 2    | 84   |
|         | 18-Dec-85 | 915                 | 506             | 495             | 7.3 | 4          | 0.4                           | 0.1         | 3.6       | 1    |      |
|         | 29-Jul-86 | 871                 | 475             | 487             | 8.1 | 4          | 0.4                           | <.05        | <1        | 1    |      |
|         | 14-Sep-87 | 110                 | 572             | 444             | 7.3 | 220        | <.1                           |             | 2.0       | 4    | 2999 |
|         | 26-Nov-87 | 659                 | 391             | 386             | 7.6 | 14         | 0.0                           | <.01        | 2.3       | 6    | <10  |
|         | 01-Dec-87 |                     |                 |                 |     |            |                               |             | <0.1      |      |      |
|         | 07-Dec-87 |                     |                 |                 |     |            |                               |             | 2.3       |      |      |

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|---------|-----------|---------------------|-----------------|-----------------|-----|------------|-------------------------------|-------------|-----------|------|------|--|--|
|         |           | COND25<br>umho's/cm | (CaCO3)<br>mg/L | (CaCO3)<br>mg/L |     | CL<br>mg/L | TKN<br>mg/L                   | NH4<br>mg/L | ug/L      | mg/L | mg/L |  |  |
| 24-I    | 05-Dec-85 | 76400               | 23100           | 104             | 6.5 | 34820      |                               | 31.5        | 25.0      | 2    |      |  |  |
|         | 18-Dec-85 | 57800               | 15800           | 94              | 7.4 | 24340      |                               | 22.0        | 10.6      | 1    |      |  |  |
|         | 29-Jul-86 | 79400               | 25773           | 1               | 5.8 |            |                               | 31.5        | 3.4       | 1    |      |  |  |
|         | 14-Sep-87 | 35800               | 25291           | 550             | 6.8 | 41730      | 9.6                           |             | 7.0       | 2    | 1472 |  |  |
|         | 26-Nov-87 | 34300               | 27765           | 39              | 6.9 | 38860      | 29.9                          | 24.98       | 2.5       | 9    | 1130 |  |  |
|         | 01-Dec-87 |                     |                 |                 |     |            |                               |             | <0.1      |      |      |  |  |
|         | 07-Dec-87 |                     |                 |                 |     |            |                               |             | 4.0       |      |      |  |  |
| 24-II   | 05-Dec-85 | 25900               | 6240            | 131             | 7.7 | 9320       | 11.7                          | 11.3        | 4.6       | 3    |      |  |  |
|         | 18-Dec-85 | 78800               | 23800           | 36              | 6.7 | 35860      |                               | 33.0        | 10.6      | 2    |      |  |  |
|         | 29-Jul-86 | 88200               | 23170           | 28              | 7.2 |            |                               | 30.5        | 3.4       | 3    |      |  |  |
|         | 14-Sep-87 | 34500               | 24603           | 220             | 6.7 | 17025      | 4.4                           |             | 4.0       | 1    | 41   |  |  |
|         | 26-Nov-87 | 33300               | 24334           | 56              | 6.8 | 33045      | 28.6                          | 26.45       | 0.1       | 9    | 1080 |  |  |
|         | 01-Dec-87 |                     |                 |                 |     |            |                               |             | <0.1      |      |      |  |  |
|         | 07-Dec-87 |                     |                 |                 |     |            |                               |             | 2.7       |      |      |  |  |
| 24-III  | 13-Nov-85 | 3930                | 1210            | 816             | 7.2 | 492        | 3.3                           | 0.6         |           | 7    | 62   |  |  |
|         | 05-Dec-85 | 2210                | 568             | 509             | 7.3 | 127        | 0.7                           | 0.2         | <1        | 2    | 30   |  |  |
|         | 18-Dec-85 | 2150                | 564             | 562             | 7.4 | 121        | 0.7                           | 0.1         | <1        | 2    |      |  |  |
|         | 29-Jul-86 | 2280                | 550             | 1               | 8.3 | 209        | 1.0                           | 0.1         | <1        | 6    |      |  |  |
|         | 14-Sep-87 | 1250                | 659             | 530             | 7.9 | 480        | <.05                          | <1          | 2.7       | 24   |      |  |  |
|         | 26-Nov-87 | 180000              | 740             | 800             | 7.3 | 640        | 0.5                           | <.01        | 3.0       | 10   | <10  |  |  |
|         | 01-Dec-87 |                     |                 |                 |     |            |                               |             | <0.1      |      |      |  |  |
|         | 07-Dec-87 |                     |                 |                 |     |            |                               |             | 1.7       |      |      |  |  |

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|---------|-----------|---------------------|-----------------|-----------------|-----|------------|-------------------------------|-------------|-----------|------|------|--|--|--|--|--|--|
|         |           | COND25<br>umho's/cm | (CaCO3)<br>mg/L | (CaCO3)<br>mg/L |     | CL<br>mg/L | TKN<br>mg/L                   | NH4<br>mg/L | ug/L      |      |      |  |  |  |  |  |  |
| 26-I    | 05-Dec-85 | 4130                | 473             | 223             | 7.6 | 526        | 4.2                           | 4.1         | <1        | 2    | 138  |  |  |  |  |  |  |
|         | 18-Dec-85 | 4020                | 437             | 163             | 8.1 | 526        | 4.0                           | 4.0         | 1.0       | 1    |      |  |  |  |  |  |  |
|         | 29-Jul-86 | 3980                | 598             | 214             | 8.2 | 487        | 4.2                           | 3.7         | 2.0       | 4    |      |  |  |  |  |  |  |
|         | 14-Sep-87 | 2990                | 756             | 420             | 8.0 | 820        | 2.0                           |             | 5.0       | <1   | 30   |  |  |  |  |  |  |
|         | 26-Nov-87 | 2700                | 611             | 410             | 7.8 | 452        | 3.5                           | 1.51        | <0.1      | 5    | 303  |  |  |  |  |  |  |
|         | 01-Dec-87 |                     |                 |                 |     |            |                               |             | <0.1      |      |      |  |  |  |  |  |  |
|         | 07-Dec-87 |                     |                 |                 |     |            |                               |             | 2.0       |      |      |  |  |  |  |  |  |
| 26-II   | 13-Nov-85 | 1970                | 357             | 532             | 9.0 | 44         | 3.8                           | 3.8         | 2.0       | 6    | 80   |  |  |  |  |  |  |
|         | 05-Dec-85 | 1840                | 486             | 1584            | 7.7 | 42         | 12.0                          | 4.3         | <1        | 2    |      |  |  |  |  |  |  |
|         | 18-Dec-85 | 1840                | 458             | 481             | 8.0 | 52         |                               | 2.9         | <1        | 2    |      |  |  |  |  |  |  |
|         | 29-Jul-86 | 1700                | 424             | 386             | 8.2 | 88         | 2.6                           | 2.4         | <1        | <1   |      |  |  |  |  |  |  |
|         | 14-Sep-87 | 1280                | 475             | 421             | 8.0 | 500        | 1.0                           |             | 3.0       | 3    | <10  |  |  |  |  |  |  |
|         | 26-Nov-87 | 1300                | 710             | 880             | 7.6 | 95         | 2.6                           | 0.57        | 0.8       | 6    | 438  |  |  |  |  |  |  |
|         | 01-Dec-87 |                     |                 |                 |     |            |                               |             | <0.1      |      |      |  |  |  |  |  |  |
| 26-III  | 07-Dec-87 |                     |                 |                 |     |            |                               |             | 1.8       |      |      |  |  |  |  |  |  |
|         | 13-Nov-85 | 2290                | 1180            | 888             | 7.2 | 10         | 0.4                           | 0.1         | <1        | <1   | 6    |  |  |  |  |  |  |
|         | 05-Dec-85 | 2690                | 1500            | 896             | 7.8 | 16         | 0.5                           | 0.2         | <1        | <1   | 62   |  |  |  |  |  |  |
|         | 18-Dec-85 | 2590                | 1440            | 904             | 7.6 | 16         | 0.4                           | 0.1         | <1        | 1    |      |  |  |  |  |  |  |
|         | 29-Jul-86 | 2380                | 1243            | 714             | 8.5 | 19         | 0.6                           | 0.1         | <1        | 13   |      |  |  |  |  |  |  |
|         | 14-Sep-87 | 2150                | 1667            | 959             | 7.7 | 575        | <.05                          |             | 5.0       | 6    | 2220 |  |  |  |  |  |  |
|         | 26-Nov-87 | 2000                | 1795            | 1160            | 7.3 | 100        | 0.4                           | <.01        | 1.9       | 1    | 168  |  |  |  |  |  |  |
|         | 01-Dec-87 |                     |                 |                 |     |            |                               |             | 1.2       |      |      |  |  |  |  |  |  |
|         | 07-Dec-87 |                     |                 |                 |     |            |                               |             | 2.3       |      |      |  |  |  |  |  |  |

BURLINGTON LANDFILL  
GLAL 87-224  
GROUND WATER - ROUTINE PARAMETERS

1985 - 1986 analyses at MOE Laboratory  
1987 analyses at Halton Region Laboratory

| STATION | DATE      | CONDUCTIVITY        | HARDNESS        | ALKALINITY      | PH  | CHLORIDE   | TOTAL<br>KJELDAHL<br>NITROGEN | AMMONIUM    | PHENOLICS | BOD5 | COD  |
|---------|-----------|---------------------|-----------------|-----------------|-----|------------|-------------------------------|-------------|-----------|------|------|
|         |           | COND25<br>umho's/cm | (CaCO3)<br>mg/L | (CaCO3)<br>mg/L |     | CL<br>mg/L | TKN<br>mg/L                   | NH4<br>mg/L | ug/L      | mg/L | mg/L |
| 27-I    | 05-Dec-85 | 9690                | 1750            | 50              | 8.5 | 2878       | 10.0                          | 10.0        | 1.0       | 3    | 102  |
|         | 18-Dec-85 | 10430               | 2040            | 98              | 7.8 | 3220       |                               | 9.8         | 0.8       | 16   |      |
|         | 29-Jul-86 | 11110               | 2246            | 166             | 7.8 | 2195       | 8.8                           | 8.6         | 1.6       | <1   |      |
|         | 14-Sep-87 | 8120                | 2374            | 210             | 8.9 | 4350       | 2.0                           | 3.6         | 3.0       | 5    | 149  |
|         | 26-Nov-87 |                     |                 |                 |     |            |                               |             | 1.0       |      |      |
|         | 26-Nov-87 |                     |                 |                 |     |            |                               |             | 2.7       |      |      |
|         | 01-Dec-87 |                     |                 |                 |     |            |                               |             | <0.1      |      |      |
|         | 07-Dec-87 |                     |                 |                 |     |            |                               |             | 4.6       |      |      |
| 27-II   | 05-Dec-85 | 3460                | 643             | 175             | 7.6 | 795        |                               | 4.1         | <1        | 4    | 42   |
|         | 18-Dec-85 | 3370                | 625             | 163             | 7.5 | 810        |                               | 2.7         | 0.6       | 12   |      |
|         | 29-Jul-86 | 3500                | 635             | 172             | 8.1 | 822        | 4.2                           | 3.8         | 1.2       | 1    |      |
|         | 14-Sep-87 | 2980                | 950             | 160             | 9.8 | 1355       | 2.0                           | 2.7         | 4.5       | 3    | 52   |
|         | 26-Nov-87 | 2920                | 659             | 176             | 7.7 | 995        | 4.7                           | 3.48        | 1.9       | 8    | 26   |
|         | 01-Dec-87 |                     |                 |                 |     |            |                               |             | <0.1      |      |      |
|         | 07-Dec-87 |                     |                 |                 |     |            |                               |             | 2.3       |      |      |
|         |           |                     |                 |                 |     |            |                               |             |           |      |      |
| 27-III  | 13-Nov-85 | 2790                | 0               | 592             | 7.0 | 540        | 1.9                           | 0.1         | <1        | 10   | 40   |
|         | 05-Dec-85 | 2810                | 1130            | 386             | 6.9 | 585        | 0.5                           | <.05        | <1        | 1    | 22   |
|         | 18-Dec-85 | 2740                | 1130            | 483             | 7.3 | 558        | 0.8                           | <.05        | <1        | 9    |      |
|         | 29-Jul-86 | 2410                | 995             | 820             | 7.7 | 430        | 0.4                           | <.05        | <1        | 1    |      |
|         | 14-Sep-87 | 2030                | 1105            | 315             | 9.4 | 885        | <.05                          |             |           | 17   | 3155 |
|         | 26-Nov-87 |                     |                 |                 |     |            |                               |             | 2.5       |      |      |
|         | 26-Nov-87 |                     |                 |                 |     |            |                               |             | 6.0       |      |      |
|         | 01-Dec-87 |                     |                 |                 |     |            |                               |             | <0.1      |      |      |
| 28-I    | 14-Nov-85 | 3240                | 1300            | 524             | 7.2 | 311        | 0.6                           | <.05        | 0.4       | 4    | 36   |
|         | 29-Jul-86 | 3180                | 1303            | 587             | 8.2 | 327        | 0.2                           | <.05        | 0.4       | 1    |      |
|         | 14-Sep-87 | 1970                | 1455            | 871             | 7.4 | 545        | <.05                          |             | 5.0       | 6    | 2401 |
|         | 26-Nov-87 | 2190                | 1218            | 672             | 7.3 | 194        | <.05                          | <.01        | 2.1       | 8    | 27   |
| 29-I    | 14-Nov-85 | 747                 | 386             | 354             | 7.5 | 4          | 0.4                           | <.05        | 0.8       | 4    | 62   |
|         | 29-Jul-86 | 834                 | 460             | 441             | 8.6 | 4          | 0.2                           | <.05        | 1.2       | 9    |      |
|         | 14-Sep-87 | 710                 | 10659           | 990             | 7.8 | 505        | <.05                          |             | <1        | 5    | 2200 |
|         | 26-Nov-87 | 700                 | 552             | 740             | 7.8 | 50         | 0.3                           | <.01        | 0.5       | <1   | 67   |
| 30-I    | 14-Nov-85 | 2060                | 1040            | 630             | 6.9 | 10         | 5.0                           | <.05        | 0.6       | 9    | 162  |
|         | 29-Jul-86 | 1740                | 867             | 382             | 8.3 | 16         | 1.6                           | 0.1         | <1        | 22   |      |
|         | 14-Sep-87 | 1420                | 1231            | 926             | 7.2 | 380        | 0.4                           |             | 2.0       | 11   | 3061 |
|         | 26-Nov-87 | 1380                | 682             | 448             | 7.2 | 19         | 1.1                           | 0.12        | 1.3       | 11   | 10   |

BURLINGTON LANDFILL  
GLAL 87-224  
GROUND WATER - ROUTINE PARAMETERS

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| STATION   | DATE      | CONDUCTIVITY        | HARDNESS        | ALKALINITY      | PH  | CHLORIDE   | TOTAL<br>KJELDAHL<br>NITROGEN | AMMONIUM    | PHENOLICS | BOD5 | COD  |
|-----------|-----------|---------------------|-----------------|-----------------|-----|------------|-------------------------------|-------------|-----------|------|------|
|           |           | COND25<br>umho's/cm | (CaCO3)<br>mg/L | (CaCO3)<br>mg/L |     | CL<br>mg/L | TKN<br>mg/L                   | NH4<br>mg/L | ug/L      | mg/L | mg/L |
| 32-I      | 14-Sep-87 | 2590                | 833             | 460             | 7.3 | 800        | 0.4                           |             | 3.0       | 13   | 2019 |
|           | 26-Nov-87 | 2900                | 1065            | 540             | 7.4 | 840        | 2.1                           | <.01        | 6.5       | 3    | 45   |
| 32-II     | 14-Sep-87 | 2180                | 1744            | 384             | 7.0 | 530        | <.1                           |             | 12.0      | 10   | 1866 |
|           | 26-Nov-87 | 2100                | 1045            | 720             | 7.2 | 350        | 0.2                           | <.01        | 2.7       | 5    | 36   |
| 32-III    | 14-Sep-87 | 2090                | 988             | 412             | 7.1 | 820        | 0.2                           |             | <1        | 16   | 3050 |
|           | 26-Nov-87 | 1900                | 986             | 700             | 7.3 | 300        | 0.6                           | <.01        | <0.1      | 6    | <10  |
| 34-I      | 14-Sep-87 | 2600                | 1454            | 413             | 7.0 | 450        | 0.4                           |             | <1        | 10   | 3095 |
|           | 26-Nov-87 | 2600                | 1459            | 740             | 7.2 | 350        | 1.0                           | <.01        | <0.1      | 2    | 36   |
| HC 15-I   | 14-Sep-87 | 26000               | 979             | 89              | 6.6 | 20260      | 0.2                           |             | 3.0       | 11   | 672  |
|           | 26-Nov-87 | 33200               | >50000          | 72              | 6.2 | 63410      | 38.7                          | 34.88       | 4.0       | 1    | 2720 |
| HC 15-II  | 14-Sep-87 | 22500               | 11211           | 65              | 8.6 | 16970      | 2.0                           |             | 5.0       | 7    | 1763 |
|           | 26-Nov-87 | 23000               | 10846           | 310             | 7.5 | 16310      | 17.6                          | 14.09       | 2.3       | 4    | 597  |
| HC 15-III | 14-Sep-87 | 12400               | 9099            | 95              | 7.3 | 7650       | 2.0                           |             | 1.0       | 6    | 976  |
|           | 26-Nov-87 | 13000               | 7789            | 390             | 7.4 | 6920       | 3.1                           | 5.32        | 2.6       | 5    | 376  |
| HC 15-IV  | 14-Sep-87 | 10400               | 9593            | 596             | 6.9 | 3830       | <.1                           |             | 2.0       | 3    | 169  |
|           | 26-Nov-87 | 10600               | 8539            | 840             | 7.0 | 3800       | 0.7                           | <.01        | 1.2       | 6    | 122  |

Burlington Landfill  
 Project No. 87-224  
 Ground Water Volatile Organic Analyses  
 Result in ug/L  
 Mann Testing Laboratory

| VOLATILE COMPOUNDS      | MDL<br>(ppb) | DATE      | TRAVELLING:<br>BANK | MONITORS |           |      |       |      |       |      |       |       |        |        |       |
|-------------------------|--------------|-----------|---------------------|----------|-----------|------|-------|------|-------|------|-------|-------|--------|--------|-------|
|                         |              |           |                     | TAP      | DISTILLED | 14-I | 14-II | 15-I | 15-II | 16-I | 16-I  | 16-II | 16-III | 16-III | 16-IV |
|                         |              |           |                     | WATER    | WATER     |      |       |      |       |      | (DUP) |       |        | (DUP)  |       |
| DICHLORODIFLUOROMETHANE | 2.0          | Sep 15/87 |                     |          |           |      |       |      |       |      |       |       |        |        |       |
|                         |              | Nov 18/87 | --                  | --       | --        |      |       |      |       |      |       |       |        |        |       |
|                         |              | Nov 26/87 | --                  |          |           | --   | 4.0   | --   | 2.13  | --   | --    | --    | --     | --     | 7.68  |
|                         |              | Dec 1/87  | --                  | --       |           |      |       |      |       |      |       |       |        |        |       |
|                         |              | Dec 7/87  | --                  |          |           |      |       |      |       |      |       |       |        |        |       |
| CHLOROMETHANE           | 2.0          | Sep 15/87 |                     |          |           |      |       |      |       |      |       |       |        |        |       |
|                         |              | Nov 18/87 | --                  | --       | --        |      |       |      |       |      |       |       |        |        |       |
|                         |              | Nov 26/87 | --                  |          |           | --   | --    | --   | --    | --   | --    | --    | --     | --     | --    |
|                         |              | Dec 1/87  | --                  | --       |           |      |       |      |       |      |       |       |        |        |       |
|                         |              | Dec 7/87  | --                  |          |           |      |       |      |       |      |       |       |        |        |       |
| VINYL CHLORIDE          | 2.0          | Sep 15/87 |                     |          |           |      |       |      |       |      |       |       |        |        |       |
|                         |              | Nov 18/87 | --                  | --       | --        |      |       |      |       |      |       |       |        |        |       |
|                         |              | Nov 26/87 | --                  |          |           | --   | --    | --   | --    | --   | --    | --    | --     | --     | --    |
|                         |              | Dec 1/87  | --                  | --       |           |      |       |      |       |      |       |       |        |        |       |
|                         |              | Dec 7/87  | --                  |          |           |      |       |      |       |      |       |       |        |        |       |
| BROMOMETHANE            | 2.0          | Sep 15/87 |                     |          |           |      |       |      |       |      |       |       |        |        |       |
|                         |              | Nov 18/87 | --                  | --       | --        |      |       |      |       |      |       |       |        |        |       |
|                         |              | Nov 26/87 | --                  |          |           | --   | --    | --   | --    | --   | --    | --    | --     | --     | --    |
|                         |              | Dec 1/87  | --                  | --       |           |      |       |      |       |      |       |       |        |        |       |
|                         |              | Dec 7/87  | --                  |          |           |      |       |      |       |      |       |       |        |        |       |
| CHLOROETHANE            | 2.0          | Sep 15/87 |                     |          |           |      |       |      |       |      |       |       |        |        |       |
|                         |              | Nov 18/87 | --                  | --       | --        |      |       |      |       |      |       |       |        |        |       |
|                         |              | Nov 26/87 | --                  |          |           | --   | --    | --   | --    | --   | --    | --    | --     | --     | --    |
|                         |              | Dec 1/87  | --                  | --       |           |      |       |      |       |      |       |       |        |        |       |
|                         |              | Dec 7/87  | --                  |          |           |      |       |      |       |      |       |       |        |        |       |
| TRICHLOROFLUOROMETHANE  | 2.0          | Sep 15/87 |                     |          |           |      |       |      |       |      |       |       |        |        |       |
|                         |              | Nov 18/87 | --                  | --       | --        |      |       |      |       |      |       |       |        |        |       |
|                         |              | Nov 26/87 | --                  |          |           | --   | --    | --   | --    | --   | --    | --    | --     | --     | --    |
|                         |              | Dec 1/87  | --                  | --       |           |      |       |      |       |      |       |       |        |        |       |
|                         |              | Dec 7/87  | --                  |          |           |      |       |      |       |      |       |       |        |        |       |

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 Ground Water Volatile Organic Analyses  
 Result in ug/L  
 Mann Testing Laboratory

| VOLATILE COMPOUNDS      | MDL<br>(ppb) | DATE      | MONITORS |       |        |      |       |        |      |       |        |      |                 |       |        |                  |                |
|-------------------------|--------------|-----------|----------|-------|--------|------|-------|--------|------|-------|--------|------|-----------------|-------|--------|------------------|----------------|
|                         |              |           | 23-I     | 23-II | 23-III | 24-I | 24-II | 24-III | 26-I | 26-II | 26-III | 27-I | 27-I<br>(B DUP) | 27-II | 27-III | 27-III<br>PERIST | 27-III<br>BAIL |
| DICHLORODIFLUOROMETHANE | 2.0          | Sep 15/87 | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                         |              | Nov 18/87 | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                         |              | Nov 26/87 | --       | --    | --     | --   | --    | 7.95   | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                         |              | Dec 1/87  | --       | --    | --     | --   | --    | 6.92   | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                         |              | Dec 7/87  | --       | --    | --     | --   | --    | 6.45   | --   | --    | --     | --   | --              | --    | TR     | --               | --             |
| CHLOROMETHANE           | 2.0          | Sep 15/87 | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                         |              | Nov 18/87 | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                         |              | Nov 26/87 | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                         |              | Dec 1/87  | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                         |              | Dec 7/87  | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
| VINYL CHLORIDE          | 2.0          | Sep 15/87 | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                         |              | Nov 18/87 | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                         |              | Nov 26/87 | --       | --    | --     | --   | --    | 3.50   | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                         |              | Dec 1/87  | --       | --    | --     | --   | --    | 10.96  | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                         |              | Dec 7/87  | --       | --    | --     | --   | --    | 12.25  | --   | --    | --     | --   | --              | --    | --     | --               | --             |
| BROMOMETHANE            | 2.0          | Sep 15/87 | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                         |              | Nov 18/87 | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                         |              | Nov 26/87 | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                         |              | Dec 1/87  | --       | --    | --     | --   | --    | --     | TR   | --    | --     | --   | --              | --    | --     | --               | --             |
|                         |              | Dec 7/87  | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
| CHLOROETHANE            | 2.0          | Sep 15/87 | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                         |              | Nov 18/87 | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                         |              | Nov 26/87 | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                         |              | Dec 1/87  | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                         |              | Dec 7/87  | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
| TRICHLOROFLUOROMETHANE  | 2.0          | Sep 15/87 | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                         |              | Nov 18/87 | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                         |              | Nov 26/87 | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                         |              | Dec 1/87  | --       | --    | --     | --   | --    | TR     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                         |              | Dec 7/87  | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |

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| VOLATILE COMPOUNDS      | MDL<br>(ppb) | DATE      | MONITORS |      |      |      |       |        |      |        |         |          |         |  |
|-------------------------|--------------|-----------|----------|------|------|------|-------|--------|------|--------|---------|----------|---------|--|
|                         |              |           | 28-I     | 29-I | 30-I | 32-I | 32-II | 32-III | 34-I | HC15-I | HC15-II | HC15-III | HC15-IV |  |
| DICHLORODIFLUOROMETHANE | 2.0          | Sep 15/87 | --       | --   | --   | --   | --    | --     | --   | --     | --      | --       | --      |  |
|                         |              | Nov 18/87 | --       | --   | --   | --   | --    | --     | --   | --     | --      | --       |         |  |
|                         |              | Nov 26/87 | --       | --   | --   | --   | 2.67  | 2.22   | 2.13 | --     | --      | --       | --      |  |
|                         |              | Dec 1/87  | --       | --   | --   | --   | --    | --     | --   | --     | --      | --       | --      |  |
|                         |              | Dec 7/87  | --       | --   | --   | --   | --    | --     | --   | --     | --      | --       | --      |  |
| CHLOROMETHANE           | 2.0          | Sep 15/87 | TR       | TR   | --   | --   | --    | --     | --   | --     | --      | --       | --      |  |
|                         |              | Nov 18/87 | --       | --   | --   | --   | --    | --     | --   | --     | --      | --       | --      |  |
|                         |              | Nov 26/87 | --       | --   | --   | --   | --    | --     | --   | --     | --      | --       | --      |  |
|                         |              | Dec 1/87  | --       | --   | --   | --   | --    | --     | --   | --     | --      | --       | --      |  |
|                         |              | Dec 7/87  | --       | --   | --   | --   | --    | --     | --   | --     | --      | --       | --      |  |
| VINYL CHLORIDE          | 2.0          | Sep 15/87 | --       | --   | --   | --   | --    | --     | --   | --     | --      | --       | --      |  |
|                         |              | Nov 18/87 | --       | --   | --   | --   | --    | --     | --   | --     | --      | --       | --      |  |
|                         |              | Nov 26/87 | --       | --   | --   | --   | --    | --     | --   | --     | --      | --       | --      |  |
|                         |              | Dec 1/87  | --       | --   | --   | --   | --    | --     | --   | --     | --      | --       | --      |  |
|                         |              | Dec 7/87  | --       | --   | --   | --   | --    | --     | --   | --     | --      | --       | --      |  |
| BROMOMETHANE            | 2.0          | Sep 15/87 | --       | --   | --   | --   | --    | --     | --   | --     | --      | --       | --      |  |
|                         |              | Nov 18/87 | --       | --   | --   | --   | --    | --     | --   | --     | --      | --       | --      |  |
|                         |              | Nov 26/87 | --       | --   | --   | --   | --    | --     | --   | --     | --      | --       | --      |  |
|                         |              | Dec 1/87  | --       | --   | --   | --   | --    | --     | --   | --     | --      | --       | --      |  |
|                         |              | Dec 7/87  | --       | --   | --   | --   | --    | --     | --   | --     | --      | --       | --      |  |
| CHLOROETHANE            | 2.0          | Sep 15/87 | --       | --   | --   | --   | --    | --     | TR   | --     | --      | --       | --      |  |
|                         |              | Nov 18/87 | --       | --   | --   | --   | --    | --     | --   | --     | --      | --       | --      |  |
|                         |              | Nov 26/87 | --       | --   | --   | --   | --    | --     | --   | --     | --      | --       | --      |  |
|                         |              | Dec 1/87  | --       | --   | --   | --   | --    | --     | --   | --     | --      | --       | --      |  |
|                         |              | Dec 7/87  | --       | --   | --   | --   | --    | --     | --   | --     | --      | --       | --      |  |
| TRICHLOROFLUOROMETHANE  | 2.0          | Sep 15/87 | --       | --   | --   | --   | --    | --     | --   | --     | --      | --       | --      |  |
|                         |              | Nov 18/87 | --       | --   | --   | --   | --    | --     | --   | --     | --      | --       | --      |  |
|                         |              | Nov 26/87 | --       | --   | --   | --   | --    | --     | --   | --     | --      | --       | --      |  |
|                         |              | Dec 1/87  | --       | --   | --   | --   | --    | --     | --   | --     | --      | --       | --      |  |
|                         |              | Dec 7/87  | --       | --   | --   | --   | --    | --     | --   | --     | --      | --       | --      |  |

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| VOLATILE COMPOUNDS     | MDL<br>(ppb) | DATE      | TRAVELLING:<br>BANK | MONITORS |           |      |       |      |       |      |       |       |        |        |       |
|------------------------|--------------|-----------|---------------------|----------|-----------|------|-------|------|-------|------|-------|-------|--------|--------|-------|
|                        |              |           |                     | TAP      | DISTILLED | 14-I | 14-II | 15-I | 15-II | 16-I | 16-I  | 16-II | 16-III | 16-III | 16-IV |
|                        |              |           |                     | WATER    | WATER     |      |       |      |       |      | (DUP) |       |        | (DUP)  |       |
| 1,1-DICHLOROETHYLENE   | 1.0          | Sep 15/87 |                     |          |           |      |       |      |       |      |       |       |        |        |       |
|                        |              | Nov 18/87 | --                  | --       | --        |      |       |      |       |      |       |       |        |        |       |
|                        |              | Nov 26/87 | --                  |          |           | --   | TR    | --   | --    | 2.06 | 2.88  | 1.0   | 2.83   | 2.19   | --    |
|                        |              | Dec 1/87  | --                  | --       |           |      |       |      |       |      |       |       |        |        |       |
|                        |              | Dec 7/87  | --                  |          |           |      |       |      |       |      |       |       |        |        |       |
| DICHLOROMETHANE        | 1.0          | Sep 15/87 |                     |          |           |      |       |      |       |      |       |       |        |        |       |
|                        |              | Nov 18/87 | --                  | TR       | --        |      |       |      |       |      |       |       |        |        |       |
|                        |              | Nov 26/87 | --                  |          |           | --   | TR    | --   | --    | TR   | TR    | TR    | 1.42   | 1.36   | TR    |
|                        |              | Dec 1/87  | TR                  | TR       |           |      |       |      |       |      |       |       |        |        |       |
|                        |              | Dec 7/87  | TR                  |          |           |      |       |      |       |      |       |       |        |        |       |
| T-1,2-DICHLOROETHYLENE | 1.0          | Sep 15/87 |                     |          |           |      |       |      |       |      |       |       |        |        |       |
|                        |              | Nov 18/87 | --                  | --       | --        |      |       |      |       |      |       |       |        |        |       |
|                        |              | Nov 26/87 | --                  |          |           | --   | --    | --   | --    | --   | --    | --    | --     | --     | TR    |
|                        |              | Dec 1/87  | --                  | --       |           |      |       |      |       |      |       |       |        |        |       |
|                        |              | Dec 7/87  | --                  |          |           |      |       |      |       |      |       |       |        |        |       |
| 1,1-DICHLOROETHANE     | 1.0          | Sep 15/87 |                     |          |           |      |       |      |       |      |       |       |        |        |       |
|                        |              | Nov 18/87 | --                  | --       | --        |      |       |      |       |      |       |       |        |        |       |
|                        |              | Nov 26/87 | --                  |          |           | --   | 1.6   | --   | --    | TR   | TR    | TR    | 4.21   | 2.31   | 1.0   |
|                        |              | Dec 1/87  | --                  | --       |           |      |       |      |       |      |       |       |        |        |       |
|                        |              | Dec 7/87  | --                  |          |           |      |       |      |       |      |       |       |        |        |       |
| CHLOROFORM             | 1.0          | Sep 15/87 |                     |          |           |      |       |      |       |      |       |       |        |        |       |
|                        |              | Nov 18/87 | 3.09                | 8.79     | --        |      |       |      |       |      |       |       |        |        |       |
|                        |              | Nov 26/87 | 2.0                 |          |           | --   | --    | --   | TR    | --   | TR    | --    | --     | --     | --    |
|                        |              | Dec 1/87  | 1.81                | 9.14     |           |      |       |      |       |      |       |       |        |        |       |
|                        |              | Dec 7/87  | 2.65                |          |           |      |       |      |       |      |       |       |        |        |       |
| 1,2-DICHLOROETHANE     | 1.0          | Sep 15/87 |                     |          |           |      |       |      |       |      |       |       |        |        |       |
|                        |              | Nov 18/87 | --                  | --       | --        |      |       |      |       |      |       |       |        |        |       |
|                        |              | Nov 26/87 | --                  |          |           | --   | --    | --   | --    | --   | --    | --    | --     | --     | --    |
|                        |              | Dec 1/87  | --                  | --       |           |      |       |      |       |      |       |       |        |        |       |
|                        |              | Dec 7/87  | --                  |          |           |      |       |      |       |      |       |       |        |        |       |

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| VOLATILE COMPOUNDS     | MDL<br>(ppb) | DATE      | MONITORS |       |        |      |       |        |      |       |        |      |                 |       |        |                  |                |
|------------------------|--------------|-----------|----------|-------|--------|------|-------|--------|------|-------|--------|------|-----------------|-------|--------|------------------|----------------|
|                        |              |           | 23-I     | 23-II | 23-III | 24-I | 24-II | 24-III | 26-I | 26-II | 26-III | 27-I | 27-I<br>(B DUP) | 27-II | 27-III | 27-III<br>PERIST | 27-III<br>BAIL |
| 1,1-DICHLOROETHYLENE   | 1.0          | Sep 15/87 | TR       | --    | TR     | TR   | TR    | TR     | 1.0  | 1.73  | 1.24   | 1.26 |                 | --    | 2.57   |                  |                |
|                        |              | Nov 18/87 |          |       |        |      |       |        |      |       |        |      |                 |       | 2.38   | --               | --             |
|                        |              | Nov 26/87 |          | TR    |        | --   | --    |        | --   | --    | --     |      |                 | --    |        |                  |                |
|                        |              | Dec 1/87  | --       | --    | --     | --   | --    | TR     | --   | --    | --     | --   |                 | --    | --     |                  |                |
|                        |              | Dec 7/87  | --       | --    | --     | --   | --    | --     | --   | --    |        | --   |                 | --    | --     |                  |                |
| DICHLOROMETHANE        | 1.0          | Sep 15/87 | TR       | TR    | 2.1    | 1.54 | 2.67  | 2.23   | 2.88 | 3.13  | 3.63   | 2.65 |                 | 1.96  | --     |                  |                |
|                        |              | Nov 18/87 |          |       |        |      |       |        |      |       |        |      | --              |       | 6.80   | --               | --             |
|                        |              | Nov 26/87 | --       | TR    | TR     | --   | --    | --     | --   | --    | --     |      |                 | --    |        |                  |                |
|                        |              | Dec 1/87  | TR       | --    | --     | TR   | --    | TR     | 1.54 | TR    | 1.02   | --   |                 | --    | --     |                  |                |
|                        |              | Dec 7/87  | --       | TR    | --     | TR   | --    | 1.23   | TR   | 1.06  |        | --   |                 | --    | --     |                  |                |
| T-1,2-DICHLOROETHYLENE | 1.0          | Sep 15/87 | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   |                 | --    | --     |                  |                |
|                        |              | Nov 18/87 |          |       |        |      |       |        |      |       |        |      | --              |       | --     | --               | --             |
|                        |              | Nov 26/87 | --       | --    | --     | --   | --    | --     | --   | --    | --     |      |                 | --    | --     |                  |                |
|                        |              | Dec 1/87  | --       | --    | --     | --   | --    | 2.85   | --   | --    | --     | --   |                 | --    | --     |                  |                |
|                        |              | Dec 7/87  | --       | --    | --     | --   | --    | 2.47   | --   | --    |        | --   |                 | --    | --     |                  |                |
| 1,1-DICHLOROETHANE     | 1.0          | Sep 15/87 | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   |                 | --    | --     |                  |                |
|                        |              | Nov 18/87 |          |       |        |      |       |        |      |       |        |      | --              |       | TR     | TR               | TR             |
|                        |              | Nov 26/87 | --       | --    | --     | --   | --    | 1.12   | --   | --    | --     |      |                 | --    |        |                  |                |
|                        |              | Dec 1/87  | --       | --    | --     | --   | --    | 3.73   | --   | --    | --     | --   |                 | --    | TR     |                  |                |
|                        |              | Dec 7/87  | --       | --    | --     | --   | --    | 3.60   | --   | --    | --     | --   |                 | --    | --     |                  |                |
| CHLOROFORM             | 1.0          | Sep 15/87 | --       | --    | 1.16   | 1.09 | 1.41  | 1.30   | 1.58 | --    | --     | --   |                 | --    | --     |                  |                |
|                        |              | Nov 18/87 |          |       |        |      |       |        |      |       |        |      | --              |       | TR     | --               | --             |
|                        |              | Nov 26/87 | --       | TR    | --     | --   | --    | --     | --   | --    | --     |      |                 | --    |        |                  |                |
|                        |              | Dec 1/87  | --       | --    | TR     | TR   | --    | TR     | TR   | TR    | --     | --   |                 | --    | --     |                  |                |
|                        |              | Dec 7/87  | TR       | --    | --     | --   | --    | TR     | TR   | TR    |        | --   |                 | --    | --     |                  |                |
| 1,2-DICHLOROETHANE     | 1.0          | Sep 15/87 | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   |                 | --    | --     |                  |                |
|                        |              | Nov 18/87 |          |       |        |      |       |        |      |       |        |      | --              |       | --     | --               | --             |
|                        |              | Nov 26/87 | --       | --    | --     | --   | --    | --     | --   | --    | --     |      |                 | --    | --     |                  |                |
|                        |              | Dec 1/87  | --       | --    | --     | --   | --    | TR     | --   | --    | --     | --   |                 | --    | --     |                  |                |
|                        |              | Dec 7/87  | --       | --    | --     | --   | --    | TR     | --   | --    | --     | --   |                 | --    | --     |                  |                |

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| VOLATILE COMPOUNDS     | MDL<br>(ppb) | DATE      | MONITORS |      |      |      |       |        |      |        |         |          |         |  |
|------------------------|--------------|-----------|----------|------|------|------|-------|--------|------|--------|---------|----------|---------|--|
|                        |              |           | 28-I     | 29-I | 30-I | 32-I | 32-II | 32-III | 34-I | HC15-I | HC15-II | HC15-III | HC15-IV |  |
| 1,1-DICHLOROETHYLENE   | 1.0          | Sep 15/87 | TR       | TR   | TR   | --   | --    | --     | --   | TR     | --      | --       |         |  |
|                        |              | Nov 18/87 |          |      |      |      |       |        |      |        |         |          |         |  |
|                        |              | Nov 26/87 | TR       | --   | --   | TR   | --    | --     | --   | --     | --      | --       |         |  |
|                        |              | Dec 1/87  |          |      |      |      |       |        |      |        |         |          |         |  |
|                        |              | Dec 7/87  |          |      |      |      |       |        |      |        |         |          |         |  |
| DICHLOROMETHANE        | 1.0          | Sep 15/87 | TR       | TR   | --   | TR   | 3.02  | 1.24   | TR   | --     | TR      | 1.12     | TR      |  |
|                        |              | Nov 18/87 |          |      |      |      |       |        |      |        |         |          |         |  |
|                        |              | Nov 26/87 | TR       | TR   | --   | --   | TR    | TR     | --   | --     | TR      | TR       | --      |  |
|                        |              | Dec 1/87  |          |      |      |      |       |        |      |        |         |          |         |  |
|                        |              | Dec 7/87  |          |      |      |      |       |        |      |        |         |          |         |  |
| T-1,2-DICHLOROETHYLENE | 1.0          | Sep 15/87 | --       | --   | --   | --   | --    | --     | --   | --     | --      | --       | --      |  |
|                        |              | Nov 18/87 |          |      |      |      |       |        |      |        |         |          |         |  |
|                        |              | Nov 26/87 | TR       | --   | --   | --   | --    | --     | --   | --     | --      | --       | --      |  |
|                        |              | Dec 1/87  |          |      |      |      |       |        |      |        |         |          |         |  |
|                        |              | Dec 7/87  |          |      |      |      |       |        |      |        |         |          |         |  |
| 1,1-DICHLOROETHANE     | 1.0          | Sep 15/87 | --       | --   | --   | 1.0  | 1.0   | 1.13   | TR   | --     | --      | --       | --      |  |
|                        |              | Nov 18/87 |          |      |      |      |       |        |      |        |         |          |         |  |
|                        |              | Nov 26/87 | --       | --   | --   | --   | 1.35  | 1.06   | 1.71 | --     | --      | --       | --      |  |
|                        |              | Dec 1/87  |          |      |      |      |       |        |      |        |         |          |         |  |
|                        |              | Dec 7/87  |          |      |      |      |       |        |      |        |         |          |         |  |
| CHLOROFORM             | 1.0          | Sep 15/87 | --       | --   | --   | --   | --    | --     | TR   | --     | --      | TR       | --      |  |
|                        |              | Nov 18/87 |          |      |      |      |       |        |      |        |         |          |         |  |
|                        |              | Nov 26/87 | --       | TR   | --   | --   | --    | --     | --   | --     | --      | --       | --      |  |
|                        |              | Dec 1/87  |          |      |      |      |       |        |      |        |         |          |         |  |
|                        |              | Dec 7/87  |          |      |      |      |       |        |      |        |         |          |         |  |
| 1,2-DICHLOROETHANE     | 1.0          | Sep 15/87 | --       | --   | --   | --   | TR    | TR     | --   | --     | --      | --       | --      |  |
|                        |              | Nov 18/87 |          |      |      |      |       |        |      |        |         |          |         |  |
|                        |              | Nov 26/87 | --       | --   | --   | --   | --    | --     | --   | --     | --      | --       | --      |  |
|                        |              | Dec 1/87  |          |      |      |      |       |        |      |        |         |          |         |  |
|                        |              | Dec 7/87  |          |      |      |      |       |        |      |        |         |          |         |  |

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|-----------------------|--------------|-----------|---------------------|----------|-----------|------|-------|------|-------|-------|-------|-------|--------|--------|-------|
|                       |              |           |                     | TAP      | DISTILLED | 14-I | 14-II | 15-I | 15-II | 16-I  | 16-I  | 16-II | 16-III | 16-III | 16-IV |
|                       |              |           |                     | WATER    | WATER     |      |       |      |       |       | (DUP) |       |        | (DUP)  |       |
| 1,1,1-TRICHLOROETHANE | 1.0          | Sep 15/87 |                     |          |           |      |       |      |       |       |       |       |        |        |       |
|                       |              | Nov 18/87 | --                  | --       | --        |      |       |      |       |       |       |       |        |        |       |
|                       |              | Nov 26/87 | --                  |          |           | --   | --    | --   | --    | 15.67 | 13.18 | 4.20  | 9.18   | 8.39   | TR    |
|                       |              | Dec 1/87  | --                  | --       |           |      |       |      |       |       |       |       |        |        |       |
|                       |              | Dec 7/87  | --                  |          |           |      |       |      |       |       |       |       |        |        |       |
| BENZENE               | 0.5          | Sep 15/87 |                     |          |           |      |       |      |       |       |       |       |        |        |       |
|                       |              | Nov 18/87 | TR                  | TR       | TR        |      |       |      |       |       |       |       |        |        |       |
|                       |              | Nov 26/87 | TR                  |          |           | TR   | TR    | TR   | TR    | TR    | TR    | TR    | 0.60   | 0.53   | TR    |
|                       |              | Dec 1/87  | TR                  | TR       |           |      |       |      |       |       |       |       |        |        |       |
|                       |              | Dec 7/87  | TR                  |          |           |      |       |      |       |       |       |       |        |        |       |
| CARBON TETRACHLORIDE  | 1.0          | Sep 15/87 |                     |          |           |      |       |      |       |       |       |       |        |        |       |
|                       |              | Nov 18/87 | --                  | --       | --        |      |       |      |       |       |       |       |        |        |       |
|                       |              | Nov 26/87 | --                  |          |           | --   | --    | --   | --    | --    | --    | --    | --     | --     | --    |
|                       |              | Dec 1/87  | --                  | --       |           |      |       |      |       |       |       |       |        |        |       |
|                       |              | Dec 7/87  | --                  |          |           |      |       |      |       |       |       |       |        |        |       |
| 1,2-DICHLOROPROPANE   | 1.0          | Sep 15/87 |                     |          |           |      |       |      |       |       |       |       |        |        |       |
|                       |              | Nov 18/87 | --                  | --       | --        |      |       |      |       |       |       |       |        |        |       |
|                       |              | Nov 26/87 | --                  |          |           | --   | --    | --   | --    | --    | --    | --    | --     | --     | --    |
|                       |              | Dec 1/87  | --                  | --       |           |      |       |      |       |       |       |       |        |        |       |
|                       |              | Dec 7/87  | --                  |          |           |      |       |      |       |       |       |       |        |        |       |
| BROMODICHLOROMETHANE  | 1.0          | Sep 15/87 |                     |          |           |      |       |      |       |       |       |       |        |        |       |
|                       |              | Nov 18/87 | --                  | 6.23     | --        |      |       |      |       |       |       |       |        |        |       |
|                       |              | Nov 26/87 | --                  |          |           | --   | --    | --   | --    | --    | --    | --    | --     | --     | --    |
|                       |              | Dec 1/87  | --                  | 6.80     |           |      |       |      |       |       |       |       |        |        |       |
|                       |              | Dec 7/87  | TR                  |          |           |      |       |      |       |       |       |       |        |        |       |
| TRICHLOROETHYLENE     | 1.0          | Sep 15/87 |                     |          |           |      |       |      |       |       |       |       |        |        |       |
|                       |              | Nov 18/87 | --                  | TR       | --        |      |       |      |       |       |       |       |        |        |       |
|                       |              | Nov 26/87 | --                  |          |           | --   | --    | --   | --    | --    | --    | --    | --     | --     | 4.80  |
|                       |              | Dec 1/87  | --                  | --       |           |      |       |      |       |       |       |       |        |        |       |
|                       |              | Dec 7/87  | --                  |          |           |      |       |      |       |       |       |       |        |        |       |

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|-----------------------|--------------|-----------|----------|-------|--------|------|-------|--------|------|-------|--------|------|-----------------|-------|--------|------------------|----------------|
|                       |              |           | 23-I     | 23-II | 23-III | 24-I | 24-II | 24-III | 26-I | 26-II | 26-III | 27-I | 27-I<br>(B DUP) | 27-II | 27-III | 27-III<br>PERIST | 27-III<br>BAIL |
|                       |              |           | :        | :     | :      | :    | :     | :      | :    | :     | :      | :    | :               | :     | :      | :                | :              |
| 1,1,1-TRICHLOROETHANE | 1.0          | Sep 15/87 | TR       | --    | 3.69   | 2.69 | 3.37  | 3.69   | 5.41 | 4.75  | 2.95   | 3.96 |                 | 2.78  | 6.82   |                  |                |
|                       |              | Nov 18/87 |          |       |        |      |       |        |      |       |        |      |                 |       |        |                  |                |
|                       |              | Nov 26/87 | TR       | 1.13  | 1.29   | --   | TR    | --     | TR   | --    | --     | --   | --              | TR    | 9.58   | --               | TR             |
|                       |              | Dec 1/87  | --       | TR    | TR     | TR   | --    | TR     | --   | --    | TR     | TR   |                 | --    | TR     |                  |                |
|                       |              | Dec 7/87  | --       | TR    | TR     | TR   | TR    | TR     | TR   | TR    |        | --   |                 | --    | --     |                  |                |
| BENZENE               | 0.5          | Sep 15/87 | --       | --    | 0.55   | TR   | TR    | TR     | TR   | TR    | TR     | TR   |                 | TR    | TR     |                  |                |
|                       |              | Nov 18/87 |          |       |        |      |       |        |      |       |        |      |                 |       |        |                  |                |
|                       |              | Nov 26/87 | TR       | TR    | TR     | TR   | TR    | TR     | TR   | TR    | TR     | TR   | TR              | TR    | TR     | TR               | TR             |
|                       |              | Dec 1/87  | TR       | TR    | TR     | TR   | TR    | TR     | TR   | TR    | TR     | TR   |                 | TR    | TR     |                  |                |
|                       |              | Dec 7/87  | TR       | TR    | TR     | TR   | TR    | 0.50   | TR   | TR    |        | TR   |                 | --    | TR     |                  |                |
| CARBON TETRACHLORIDE  | 1.0          | Sep 15/87 | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   |                 | --    | --     |                  |                |
|                       |              | Nov 18/87 |          |       |        |      |       |        |      |       |        |      |                 |       |        |                  |                |
|                       |              | Nov 26/87 | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   |                 | --    | --     | --               | --             |
|                       |              | Dec 1/87  | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   |                 | --    | --     | --               | --             |
|                       |              | Dec 7/87  | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   |                 | --    | --     | --               | --             |
| 1,2-DICHLOROPROPANE   | 1.0          | Sep 15/87 | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   |                 | --    | --     |                  |                |
|                       |              | Nov 18/87 |          |       |        |      |       |        |      |       |        |      |                 |       |        |                  |                |
|                       |              | Nov 26/87 | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   |                 | --    | --     | --               | --             |
|                       |              | Dec 1/87  | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   |                 | --    | --     | --               | --             |
|                       |              | Dec 7/87  | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   |                 | --    | --     | --               | --             |
| BROMODICHLOROMETHANE  | 1.0          | Sep 15/87 | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   |                 | --    | --     |                  |                |
|                       |              | Nov 18/87 |          |       |        |      |       |        |      |       |        |      |                 |       |        |                  |                |
|                       |              | Nov 26/87 | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   |                 | --    | --     | --               | --             |
|                       |              | Dec 1/87  | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   |                 | --    | --     | --               | --             |
|                       |              | Dec 7/87  | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   |                 | --    | --     | --               | --             |
| TRICHLOROETHYLENE     | 1.0          | Sep 15/87 | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   |                 | --    | --     |                  |                |
|                       |              | Nov 18/87 |          |       |        |      |       |        |      |       |        |      |                 |       |        |                  |                |
|                       |              | Nov 26/87 | --       | --    | --     | --   | --    | 6.06   | --   | --    | --     | --   |                 | --    | TR     | TR               | TR             |
|                       |              | Dec 1/87  | --       | --    | --     | --   | --    | 12.07  | --   | --    | --     | --   |                 | --    | TR     |                  |                |
|                       |              | Dec 7/87  | --       | --    | --     | --   | --    | 11.82  | --   | --    | --     | --   |                 | --    | TR     |                  |                |

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| VOLATILE COMPOUNDS    | MDL<br>(ppb) | DATE      | MONITORS |      |      |      |       |        |      |        |         |          |         |
|-----------------------|--------------|-----------|----------|------|------|------|-------|--------|------|--------|---------|----------|---------|
|                       |              |           | 28-I     | 29-I | 30-I | 32-I | 32-II | 32-III | 34-I | HC15-I | HC15-II | HC15-III | HC15-IV |
| 1,1,1-TRICHLOROETHANE | 1.0          | Sep 15/87 | 1.93     | 2.71 | 1.43 | 1.0  | 1.41  | 1.54   | --   | --     | 2.34    | --       | --      |
|                       |              | Nov 18/87 |          |      |      |      |       |        |      |        |         |          |         |
|                       |              | Nov 26/87 | 1.25     | TR   | 1.45 | --   | --    | --     | --   | --     | --      | TR       | TR      |
|                       |              | Dec 1/87  |          |      |      |      |       |        |      |        |         |          |         |
|                       |              | Dec 7/87  |          |      |      |      |       |        |      |        |         |          |         |
| BENZENE               | 0.5          | Sep 15/87 | TR       | TR   | TR   | TR   | TR    | TR     | TR   | TR     | TR      | TR       | TR      |
|                       |              | Nov 18/87 |          |      |      |      |       |        |      |        |         |          |         |
|                       |              | Nov 26/87 | TR       | TR   | TR   | TR   | TR    | TR     | TR   | 0.56   | TR      | TR       | TR      |
|                       |              | Dec 1/87  |          |      |      |      |       |        |      |        |         |          |         |
|                       |              | Dec 7/87  |          |      |      |      |       |        |      |        |         |          |         |
| CARBON TETRACHLORIDE  | 1.0          | Sep 15/87 | --       | --   | --   | --   | --    | --     | --   | --     | --      | --       | --      |
|                       |              | Nov 18/87 |          |      |      |      |       |        |      |        |         |          |         |
|                       |              | Nov 26/87 | --       | --   | --   | --   | --    | --     | --   | --     | --      | --       | --      |
|                       |              | Dec 1/87  |          |      |      |      |       |        |      |        |         |          |         |
|                       |              | Dec 7/87  |          |      |      |      |       |        |      |        |         |          |         |
| 1,2-DICHLOROPROPANE   | 1.0          | Sep 15/87 | --       | --   | --   | --   | --    | --     | --   | --     | --      | --       | --      |
|                       |              | Nov 18/87 |          |      |      |      |       |        |      |        |         |          |         |
|                       |              | Nov 26/87 | --       | --   | --   | --   | --    | --     | --   | --     | --      | --       | --      |
|                       |              | Dec 1/87  |          |      |      |      |       |        |      |        |         |          |         |
|                       |              | Dec 7/87  |          |      |      |      |       |        |      |        |         |          |         |
| BROMODICHLOROMETHANE  | 1.0          | Sep 15/87 | --       | --   | --   | --   | --    | --     | --   | --     | --      | --       | --      |
|                       |              | Nov 18/87 |          |      |      |      |       |        |      |        |         |          |         |
|                       |              | Nov 26/87 | --       | --   | --   | --   | --    | --     | --   | --     | --      | --       | --      |
|                       |              | Dec 1/87  |          |      |      |      |       |        |      |        |         |          |         |
|                       |              | Dec 7/87  |          |      |      |      |       |        |      |        |         |          |         |
| TRICHLOROETHYLENE     | 1.0          | Sep 15/87 | --       | --   | --   | TR   | TR    | TR     | --   | --     | --      | --       | --      |
|                       |              | Nov 18/87 |          |      |      |      |       |        |      |        |         |          |         |
|                       |              | Nov 26/87 | TR       | --   | --   | TR   | 1.0   | TR     | --   | --     | --      | --       | --      |
|                       |              | Dec 1/87  |          |      |      |      |       |        |      |        |         |          |         |
|                       |              | Dec 7/87  |          |      |      |      |       |        |      |        |         |          |         |

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| VOLATILE COMPOUNDS     | MDL<br>(ppb) | DATE      | TRAVELLING:<br>BANK | MONITORS |           |      |       |      |       |      |       |       |        |        |       |
|------------------------|--------------|-----------|---------------------|----------|-----------|------|-------|------|-------|------|-------|-------|--------|--------|-------|
|                        |              |           |                     | TAP      | DISTILLED | 14-I | 14-II | 15-I | 15-II | 16-I | 16-I  | 16-II | 16-III | 16-III | 16-IV |
|                        |              |           |                     | WATER    | WATER     |      |       |      |       |      | (DUP) |       |        | (DUP)  |       |
| 1,3-DICHLOROPROPENE(Z) | 1.0          | Sep 15/87 |                     |          |           |      |       |      |       |      |       |       |        |        |       |
|                        |              | Nov 18/87 | --                  | --       | --        |      |       |      |       |      |       |       |        |        |       |
|                        |              | Nov 26/87 | --                  |          |           | --   | --    | --   | --    | --   | --    | --    | --     | --     | --    |
|                        |              | Dec 1/87  | --                  | --       |           |      |       |      |       |      |       |       |        |        |       |
|                        |              | Dec 7/87  | --                  |          |           |      |       |      |       |      |       |       |        |        |       |
| 1,3-DICHLOROPROPENE(E) | 1.0          | Sep 15/87 |                     |          |           |      |       |      |       |      |       |       |        |        |       |
|                        |              | Nov 18/87 | --                  | --       | --        |      |       |      |       |      |       |       |        |        |       |
|                        |              | Nov 26/87 | --                  |          |           | --   | --    | --   | --    | --   | --    | --    | --     | --     | --    |
|                        |              | Dec 1/87  | --                  | --       |           |      |       |      |       |      |       |       |        |        |       |
|                        |              | Dec 7/87  | --                  |          |           |      |       |      |       |      |       |       |        |        |       |
| 1,1,2-TRICHLOROETHANE  | 1.0          | Sep 15/87 |                     |          |           |      |       |      |       |      |       |       |        |        |       |
|                        |              | Nov 18/87 | --                  | --       | --        |      |       |      |       |      |       |       |        |        |       |
|                        |              | Nov 26/87 | --                  |          |           | --   | --    | --   | --    | --   | --    | --    | --     | --     | --    |
|                        |              | Dec 1/87  | --                  | --       |           |      |       |      |       |      |       |       |        |        |       |
|                        |              | Dec 7/87  | --                  |          |           |      |       |      |       |      |       |       |        |        |       |
| TOLUENE                | 0.5          | Sep 15/87 |                     |          |           |      |       |      |       |      |       |       |        |        |       |
|                        |              | Nov 18/87 | TR                  | TR       | TR        |      |       |      |       |      |       |       |        |        |       |
|                        |              | Nov 26/87 | TR                  |          |           | TR   | TR    | TR   | --    | 1.45 | 1.32  | 0.74  | 8.78   | 8.27   | TR    |
|                        |              | Dec 1/87  | TR                  | TR       |           |      |       |      |       |      |       |       |        |        |       |
|                        |              | Dec 7/87  | --                  |          |           |      |       |      |       |      |       |       |        |        |       |
| DIBROMOCHLOROMETHANE   | 1.0          | Sep 15/87 |                     |          |           |      |       |      |       |      |       |       |        |        |       |
|                        |              | Nov 18/87 | --                  | --       | --        |      |       |      |       |      |       |       |        |        |       |
|                        |              | Nov 26/87 | --                  |          |           | --   | --    | --   | --    | --   | --    | --    | --     | --     | --    |
|                        |              | Dec 1/87  | --                  | 3.29     |           |      |       |      |       |      |       |       |        |        |       |
|                        |              | Dec 7/87  | --                  |          |           |      |       |      |       |      |       |       |        |        |       |
| TETRACHLOROETHYLENE    | 1.0          | Sep 15/87 |                     |          |           |      |       |      |       |      |       |       |        |        |       |
|                        |              | Nov 18/87 | --                  | 1.31     | --        |      |       |      |       |      |       |       |        |        |       |
|                        |              | Nov 26/87 | --                  |          |           | --   | --    | --   | --    | --   | --    | --    | --     | --     | TR    |
|                        |              | Dec 1/87  | --                  | --       |           |      |       |      |       |      |       |       |        |        |       |
|                        |              | Dec 7/87  | --                  |          |           |      |       |      |       |      |       |       |        |        |       |

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| VOLATILE COMPOUNDS     | MDL<br>(ppb) | DATE      | MONITORS |       |        |      |       |        |      |       |        |      |                 |       |        |                  |                |
|------------------------|--------------|-----------|----------|-------|--------|------|-------|--------|------|-------|--------|------|-----------------|-------|--------|------------------|----------------|
|                        |              |           | 23-I     | 23-II | 23-III | 24-I | 24-II | 24-III | 26-I | 26-II | 26-III | 27-I | 27-I<br>(B DUP) | 27-II | 27-III | 27-III<br>PERIST | 27-III<br>BAIL |
| 1,3-DICHLOROPROPENE(Z) | 1.0          | Sep 15/87 | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                        |              | Nov 18/87 | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                        |              | Nov 26/87 | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                        |              | Dec 1/87  | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                        |              | Dec 7/87  | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
| 1,3-DICHLOROPROPENE(E) | 1.0          | Sep 15/87 | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                        |              | Nov 18/87 | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                        |              | Nov 26/87 | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                        |              | Dec 1/87  | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                        |              | Dec 7/87  | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
| 1,1,2-TRICHLOROETHANE  | 1.0          | Sep 15/87 | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                        |              | Nov 18/87 | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                        |              | Nov 26/87 | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                        |              | Dec 1/87  | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                        |              | Dec 7/87  | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
| TOLUENE                | 0.5          | Sep 15/87 | TR       | TR    | TR     | TR   | TR    | TR     | TR   | TR    | TR     | TR   | TR              | TR    | TR     | TR               | TR             |
|                        |              | Nov 18/87 | --       | --    | --     | TR   | TR    | TR     | TR   | TR    | TR     | TR   | TR              | TR    | 5.23   | TR               | TR             |
|                        |              | Nov 26/87 | TR       | --    | --     | TR   | TR    | TR     | TR   | TR    | TR     | TR   | TR              | TR    | --     | --               | --             |
|                        |              | Dec 1/87  | --       | --    | TR     | --   | TR    | TR     | TR   | TR    | TR     | TR   | TR              | TR    | --     | --               | --             |
|                        |              | Dec 7/87  | --       | --    | --     | --   | --    | TR     | TR   | --    | --     | --   | --              | --    | --     | --               | --             |
| DIBROMOCHLOROMETHANE   | 1.0          | Sep 15/87 | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                        |              | Nov 18/87 | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                        |              | Nov 26/87 | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                        |              | Dec 1/87  | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                        |              | Dec 7/87  | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
| TETRACHLOROETHYLENE    | 1.0          | Sep 15/87 | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                        |              | Nov 18/87 | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                        |              | Nov 26/87 | --       | --    | --     | --   | --    | TR     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                        |              | Dec 1/87  | --       | --    | --     | --   | --    | 1.0    | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                        |              | Dec 7/87  | --       | --    | --     | --   | --    | TR     | --   | --    | --     | --   | --              | --    | --     | --               | --             |

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| VOLATILE COMPOUNDS     | MDL<br>(ppb) | DATE      | MONITORS |      |      |      |       |        |      |        |         |          |         |  |
|------------------------|--------------|-----------|----------|------|------|------|-------|--------|------|--------|---------|----------|---------|--|
|                        |              |           | 28-I     | 29-I | 30-I | 32-I | 32-II | 32-III | 34-I | HC15-I | HC15-II | HC15-III | HC15-IV |  |
| 1,3-DICHLOROPROPENE(Z) | 1.0          | Sep 15/87 | --       | --   | --   | --   | --    | --     | --   | --     | --      | --       | --      |  |
|                        |              | Nov 18/87 |          |      |      |      |       |        |      |        |         |          |         |  |
|                        |              | Nov 26/87 | --       | --   | --   | --   | --    | --     | --   | --     | --      | --       | --      |  |
|                        |              | Dec 1/87  |          |      |      |      |       |        |      |        |         |          |         |  |
|                        |              | Dec 7/87  |          |      |      |      |       |        |      |        |         |          |         |  |
| 1,3-DICHLOROPROPENE(E) | 1.0          | Sep 15/87 | --       | --   | --   | --   | --    | --     | --   | --     | --      | --       | --      |  |
|                        |              | Nov 18/87 |          |      |      |      |       |        |      |        |         |          |         |  |
|                        |              | Nov 26/87 | --       | --   | --   | --   | --    | --     | --   | --     | --      | --       | --      |  |
|                        |              | Dec 1/87  |          |      |      |      |       |        |      |        |         |          |         |  |
|                        |              | Dec 7/87  |          |      |      |      |       |        |      |        |         |          |         |  |
| 1,1,2-TRICHLOROETHANE  | 1.0          | Sep 15/87 | --       | --   | --   | --   | --    | --     | --   | --     | --      | --       | --      |  |
|                        |              | Nov 18/87 |          |      |      |      |       |        |      |        |         |          |         |  |
|                        |              | Nov 26/87 | --       | --   | --   | --   | --    | --     | --   | --     | --      | --       | --      |  |
|                        |              | Dec 1/87  |          |      |      |      |       |        |      |        |         |          |         |  |
|                        |              | Dec 7/87  |          |      |      |      |       |        |      |        |         |          |         |  |
| TOLUENE                | 0.5          | Sep 15/87 | TR       | TR   | TR   | TR   | TR    | TR     | TR   | TR     | 0.58    | TR       | --      |  |
|                        |              | Nov 18/87 |          |      |      |      |       |        |      |        |         |          |         |  |
|                        |              | Nov 26/87 | 1.91     | TR   | TR   | TR   | TR    | TR     | TR   | 138.78 | TR      | TR       | --      |  |
|                        |              | Dec 1/87  |          |      |      |      |       |        |      |        |         |          |         |  |
|                        |              | Dec 7/87  |          |      |      |      |       |        |      |        |         |          |         |  |
| DIBROMOCHLOROMETHANE   | 1.0          | Sep 15/87 | --       | --   | --   | --   | --    | --     | --   | --     | --      | --       | --      |  |
|                        |              | Nov 18/87 |          |      |      |      |       |        |      |        |         |          |         |  |
|                        |              | Nov 26/87 | --       | --   | --   | --   | --    | --     | --   | --     | --      | --       | --      |  |
|                        |              | Dec 1/87  |          |      |      |      |       |        |      |        |         |          |         |  |
|                        |              | Dec 7/87  |          |      |      |      |       |        |      |        |         |          |         |  |
| TETRACHLOROETHYLENE    | 1.0          | Sep 15/87 | --       | --   | --   | --   | --    | --     | --   | --     | --      | --       | --      |  |
|                        |              | Nov 18/87 |          |      |      |      |       |        |      |        |         |          |         |  |
|                        |              | Nov 26/87 | --       | --   | --   | --   | --    | --     | --   | --     | --      | --       | --      |  |
|                        |              | Dec 1/87  |          |      |      |      |       |        |      |        |         |          |         |  |
|                        |              | Dec 7/87  |          |      |      |      |       |        |      |        |         |          |         |  |

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| VOLATILE COMPOUNDS        | MDL<br>(ppb) | DATE      | TRAVELLING:<br>BANK | MONITORS |           |      |       |      |       |      |       |       |        |        |       |
|---------------------------|--------------|-----------|---------------------|----------|-----------|------|-------|------|-------|------|-------|-------|--------|--------|-------|
|                           |              |           |                     | TAP      | DISTILLED | 14-I | 14-II | 15-I | 15-II | 16-I | 16-I  | 16-II | 16-III | 16-III | 16-IV |
|                           |              |           |                     | WATER    | WATER     |      |       |      |       |      | (DUP) |       |        | (DUP)  |       |
| CHLOROBENZENE             | 0.5          | Sep 15/87 |                     |          |           |      |       |      |       |      |       |       |        |        |       |
|                           |              | Nov 18/87 | --                  | --       | --        |      |       |      |       |      |       |       |        |        |       |
|                           |              | Nov 26/87 | --                  |          |           | --   | --    | --   | --    | --   | --    | --    | --     | --     | --    |
|                           |              | Dec 1/87  | --                  | --       |           |      |       |      |       |      |       |       |        |        |       |
|                           |              | Dec 7/87  | --                  |          |           |      |       |      |       |      |       |       |        |        |       |
| ETHYL BENZENE             | 0.5          | Sep 15/87 |                     |          |           |      |       |      |       |      |       |       |        |        |       |
|                           |              | Nov 18/87 | --                  | --       | --        |      |       |      |       |      |       |       |        |        |       |
|                           |              | Nov 26/87 | --                  |          |           | --   | --    | --   | --    | --   | --    | --    | --     | --     | --    |
|                           |              | Dec 1/87  | --                  | --       |           |      |       |      |       |      |       |       |        |        |       |
|                           |              | Dec 7/87  | --                  |          |           |      |       |      |       |      |       |       |        |        |       |
| P & M XYLENE              | 0.5          | Sep 15/87 |                     |          |           |      |       |      |       |      |       |       |        |        |       |
|                           |              | Nov 18/87 | --                  | --       | --        |      |       |      |       |      |       |       |        |        |       |
|                           |              | Nov 26/87 | TR                  |          |           | TR   | --    | TR   | --    | --   | --    | --    | --     | --     | --    |
|                           |              | Dec 1/87  | --                  | --       |           |      |       |      |       |      |       |       |        |        |       |
|                           |              | Dec 7/87  | --                  |          |           |      |       |      |       |      |       |       |        |        |       |
| BROMOFORM                 | 1.0          | Sep 15/87 |                     |          |           |      |       |      |       |      |       |       |        |        |       |
|                           |              | Nov 18/87 | --                  | TR       | --        |      |       |      |       |      |       |       |        |        |       |
|                           |              | Nov 26/87 | --                  |          |           | --   | --    | --   | --    | --   | --    | --    | --     | --     | --    |
|                           |              | Dec 1/87  | --                  | TR       |           |      |       |      |       |      |       |       |        |        |       |
|                           |              | Dec 7/87  | --                  |          |           |      |       |      |       |      |       |       |        |        |       |
| O-XYLENE                  | 0.5          | Sep 15/87 |                     |          |           |      |       |      |       |      |       |       |        |        |       |
|                           |              | Nov 18/87 | --                  | --       | --        |      |       |      |       |      |       |       |        |        |       |
|                           |              | Nov 26/87 | --                  |          |           | --   | --    | --   | --    | --   | --    | --    | --     | --     | --    |
|                           |              | Dec 1/87  | --                  | --       |           |      |       |      |       |      |       |       |        |        |       |
|                           |              | Dec 7/87  | --                  |          |           |      |       |      |       |      |       |       |        |        |       |
| 1,1,2,2-TETRACHLOROETHANE | 1.0          | Sep 15/87 |                     |          |           |      |       |      |       |      |       |       |        |        |       |
|                           |              | Nov 18/87 | --                  | --       | --        |      |       |      |       |      |       |       |        |        |       |
|                           |              | Nov 26/87 | --                  |          |           | --   | --    | --   | --    | --   | --    | --    | --     | --     | --    |
|                           |              | Dec 1/87  | --                  | --       |           |      |       |      |       |      |       |       |        |        |       |
|                           |              | Dec 7/87  | --                  |          |           |      |       |      |       |      |       |       |        |        |       |

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 Mann Testing Laboratory

| VOLATILE COMPOUNDS        | MDL<br>(ppb) | DATE      | MONITORS |       |        |      |       |        |      |       |        |      |                 |       |        |                  |                |
|---------------------------|--------------|-----------|----------|-------|--------|------|-------|--------|------|-------|--------|------|-----------------|-------|--------|------------------|----------------|
|                           |              |           | 23-I     | 23-II | 23-III | 24-I | 24-II | 24-III | 26-I | 26-II | 26-III | 27-I | 27-I<br>(B DUP) | 27-II | 27-III | 27-III<br>PERIST | 27-III<br>BAIL |
| CHLOROBENZENE             | 0.5          | Sep 15/87 | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                           |              | Nov 18/87 | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                           |              | Nov 26/87 | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                           |              | Dec 1/87  | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                           |              | Dec 7/87  | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
| ETHYL BENZENE             | 0.5          | Sep 15/87 | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                           |              | Nov 18/87 | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                           |              | Nov 26/87 | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | 3.31   | --               | --             |
|                           |              | Dec 1/87  | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                           |              | Dec 7/87  | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
| P & M XYLENE              | 0.5          | Sep 15/87 | TR       | --    | --     | --   | --    | --     | TR   | TR    | --     | TR   | --              | TR    | --     | --               | --             |
|                           |              | Nov 18/87 | --       | --    | --     | --   | --    | --     | --   | --    | --     | TR   | --              | --    | 10.45  | TR               | --             |
|                           |              | Nov 26/87 | --       | --    | --     | TR   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                           |              | Dec 1/87  | --       | --    | --     | TR   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                           |              | Dec 7/87  | --       | --    | --     | TR   | TR    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
| BROMOFORM                 | 1.0          | Sep 15/87 | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                           |              | Nov 18/87 | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                           |              | Nov 26/87 | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                           |              | Dec 1/87  | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                           |              | Dec 7/87  | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
| O-XYLENE                  | 0.5          | Sep 15/87 | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                           |              | Nov 18/87 | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                           |              | Nov 26/87 | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | 4.62   | --               | --             |
|                           |              | Dec 1/87  | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                           |              | Dec 7/87  | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
| 1,1,2,2-TETRACHLOROETHANE | 1.0          | Sep 15/87 | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                           |              | Nov 18/87 | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                           |              | Nov 26/87 | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                           |              | Dec 1/87  | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                           |              | Dec 7/87  | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |

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| VOLATILE COMPOUNDS        | MDL<br>(ppb) | DATE      | MONITORS |      |      |      |       |        |      |        |         |          |         |  |
|---------------------------|--------------|-----------|----------|------|------|------|-------|--------|------|--------|---------|----------|---------|--|
|                           |              |           | 28-I     | 29-I | 30-I | 32-I | 32-II | 32-III | 34-I | HC15-I | HC15-II | HC15-III | HC15-IV |  |
| CHLOROBENZENE             | 0.5          | Sep 15/87 | --       | --   | --   | --   | --    | --     | --   | --     | --      | --       | --      |  |
|                           |              | Nov 18/87 |          |      |      |      |       |        |      |        |         |          |         |  |
|                           |              | Nov 26/87 | --       | --   | --   | --   | --    | --     | --   | --     | --      | --       | --      |  |
|                           |              | Dec 1/87  |          |      |      |      |       |        |      |        |         |          |         |  |
|                           |              | Dec 7/87  |          |      |      |      |       |        |      |        |         |          |         |  |
| ETHYL BENZENE             | 0.5          | Sep 15/87 | --       | --   | --   | --   | --    | --     | --   | --     | --      | --       | --      |  |
|                           |              | Nov 18/87 |          |      |      |      |       |        |      |        |         |          |         |  |
|                           |              | Nov 26/87 | --       | --   | --   | --   | --    | --     | 0.62 | TR     | TR      |          | --      |  |
|                           |              | Dec 1/87  |          |      |      |      |       |        |      |        |         |          |         |  |
|                           |              | Dec 7/87  |          |      |      |      |       |        |      |        |         |          |         |  |
| P & M XYLENE              | 0.5          | Sep 15/87 | TR       | --   | TR   | --   | --    | --     | --   | --     | --      | --       | --      |  |
|                           |              | Nov 18/87 |          |      |      |      |       |        |      |        |         |          |         |  |
|                           |              | Nov 26/87 | --       | --   | --   | --   | --    | --     | 1.52 | TR     | TR      |          | --      |  |
|                           |              | Dec 1/87  |          |      |      |      |       |        |      |        |         |          |         |  |
|                           |              | Dec 7/87  |          |      |      |      |       |        |      |        |         |          |         |  |
| BROMOFORM                 | 1.0          | Sep 15/87 | --       | --   | --   | --   | --    | --     | --   | --     | --      | --       | --      |  |
|                           |              | Nov 18/87 |          |      |      |      |       |        |      |        |         |          |         |  |
|                           |              | Nov 26/87 | --       | --   | --   | --   | --    | --     | --   | --     | --      | --       | --      |  |
|                           |              | Dec 1/87  |          |      |      |      |       |        |      |        |         |          |         |  |
|                           |              | Dec 7/87  |          |      |      |      |       |        |      |        |         |          |         |  |
| O-XYLENE                  | 0.5          | Sep 15/87 | --       | --   | TR   | --   | --    | --     | --   | --     | --      | --       | --      |  |
|                           |              | Nov 18/87 |          |      |      |      |       |        |      |        |         |          |         |  |
|                           |              | Nov 26/87 | --       | --   | --   | --   | --    | --     | 0.74 | TR     | TR      |          | --      |  |
|                           |              | Dec 1/87  |          |      |      |      |       |        |      |        |         |          |         |  |
|                           |              | Dec 7/87  |          |      |      |      |       |        |      |        |         |          |         |  |
| 1,1,2,2-TETRACHLOROETHANE | 1.0          | Sep 15/87 | --       | --   | --   | --   | --    | --     | --   | --     | --      | --       | --      |  |
|                           |              | Nov 18/87 |          |      |      |      |       |        |      |        |         |          |         |  |
|                           |              | Nov 26/87 | --       | --   | --   | --   | --    | --     | --   | --     | --      | --       | --      |  |
|                           |              | Dec 1/87  |          |      |      |      |       |        |      |        |         |          |         |  |
|                           |              | Dec 7/87  |          |      |      |      |       |        |      |        |         |          |         |  |

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| VOLATILE COMPOUNDS       | MDL<br>(ppb) | DATE      | TRAVELLING:<br>BANK | MONITORS |           |      |       |      |       |       |       |       |        |        |       |
|--------------------------|--------------|-----------|---------------------|----------|-----------|------|-------|------|-------|-------|-------|-------|--------|--------|-------|
|                          |              |           |                     | TAP      | DISTILLED | 14-I | 14-II | 15-I | 15-II | 16-I  | 16-I  | 16-II | 16-III | 16-III | 16-IV |
|                          |              |           |                     | WATER    | WATER     |      |       |      |       | (DUP) | (DUP) |       |        | (DUP)  |       |
| 1,3-DICHLOROBENZENE      | 1.0          | Sep 15/87 |                     |          |           |      |       |      |       |       |       |       |        |        |       |
|                          |              | Nov 18/87 | --                  | --       | --        |      |       |      |       |       |       |       |        |        |       |
|                          |              | Nov 26/87 | --                  |          |           |      |       |      |       |       |       |       |        |        |       |
|                          |              | Dec 1/87  | --                  | --       |           |      |       |      |       |       |       |       |        |        |       |
|                          |              | Dec 7/87  | --                  |          |           |      |       |      |       |       |       |       |        |        |       |
| 1,4-DICHLOROBENZENE      | 1.0          | Sep 15/87 |                     |          |           |      |       |      |       |       |       |       |        |        |       |
|                          |              | Nov 18/87 | --                  | --       | --        |      |       |      |       |       |       |       |        |        |       |
|                          |              | Nov 26/87 | --                  |          |           |      |       |      |       |       |       |       |        |        |       |
|                          |              | Dec 1/87  | --                  | --       |           |      |       |      |       |       |       |       |        |        |       |
|                          |              | Dec 7/87  | --                  |          |           |      |       |      |       |       |       |       |        |        |       |
| 1,2-DICHLOROBENZENE      | 1.0          | Sep 15/87 |                     |          |           |      |       |      |       |       |       |       |        |        |       |
|                          |              | Nov 18/87 | --                  | --       | --        |      |       |      |       |       |       |       |        |        |       |
|                          |              | Nov 26/87 | --                  |          |           |      |       |      |       |       |       |       |        |        |       |
|                          |              | Dec 1/87  | --                  | --       |           |      |       |      |       |       |       |       |        |        |       |
|                          |              | Dec 7/87  | --                  |          |           |      |       |      |       |       |       |       |        |        |       |
| CIS-1,2-DICHLOROETHYLENE | 1.0          | Sep 15/87 |                     |          |           |      |       |      |       |       |       |       |        |        |       |
|                          |              | Nov 18/87 | --                  | --       | --        |      |       |      |       |       |       |       |        |        |       |
|                          |              | Nov 26/87 | --                  |          |           |      | TR    |      |       |       |       |       |        |        |       |
|                          |              | Dec 1/87  | --                  | --       |           |      |       |      |       |       |       |       |        |        |       |
|                          |              | Dec 7/87  | --                  |          |           |      |       |      |       |       |       |       |        |        |       |
| * 2-BUTANONE             |              |           |                     |          |           |      |       |      |       |       |       |       | 3.13   | 3.17   |       |
| * THF                    |              |           |                     |          |           |      |       |      |       |       |       |       | 42.40  | 43.74  |       |
| * DICHLOROFLUOROMETHANE  |              | Nov 26/87 |                     |          |           |      |       |      |       |       |       |       |        |        | 5.44  |
|                          |              | Dec 1/87  |                     |          |           |      |       |      |       |       |       |       |        |        |       |
|                          |              | Dec 7/87  |                     |          |           |      |       |      |       |       |       |       |        |        |       |

TR = TRACE AMOUNT DETECTED  
 -- = NONE DETECTED  
 MDL = METHOD DETECTION LIMIT  
 \* = SEMIQUANTITATIVE VALUES

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 Mann Testing Laboratory

| VOLATILE COMPOUNDS       | MDL<br>(ppb) | DATE      | MONITORS |       |        |      |       |        |      |       |        |      |                 |       |        |                  |                |
|--------------------------|--------------|-----------|----------|-------|--------|------|-------|--------|------|-------|--------|------|-----------------|-------|--------|------------------|----------------|
|                          |              |           | 23-I     | 23-II | 23-III | 24-I | 24-II | 24-III | 26-I | 26-II | 26-III | 27-I | 27-I<br>(B DUP) | 27-II | 27-III | 27-III<br>PERIST | 27-III<br>BAIL |
| 1,3-DICHLOROBENZENE      | 1.0          | Sep 15/87 | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                          |              | Nov 18/87 | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                          |              | Nov 26/87 | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                          |              | Dec 1/87  | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                          |              | Dec 7/87  | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
| 1,4-DICHLOROBENZENE      | 1.0          | Sep 15/87 | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                          |              | Nov 18/87 | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | TR     | --               | --             |
|                          |              | Nov 26/87 | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                          |              | Dec 1/87  | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                          |              | Dec 7/87  | --       | --    | --     | --   | --    | TR     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
| 1,2-DICHLOROBENZENE      | 1.0          | Sep 15/87 | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                          |              | Nov 18/87 | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                          |              | Nov 26/87 | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                          |              | Dec 1/87  | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                          |              | Dec 7/87  | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
| CIS-1,2-DICHLOROETHYLENE | 1.0          | Sep 15/87 | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                          |              | Nov 18/87 | --       | --    | --     | --   | --    | --     | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                          |              | Nov 26/87 | --       | --    | --     | --   | --    | 8.71   | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                          |              | Dec 1/87  | --       | --    | --     | --   | --    | 32.82  | --   | --    | --     | --   | --              | --    | --     | --               | --             |
|                          |              | Dec 7/87  | --       | --    | --     | --   | --    | 29.47  | --   | --    | --     | --   | --              | --    | --     | --               | --             |
| * 2-BUTANONE             |              |           |          |       |        |      |       |        |      |       |        |      |                 |       |        |                  |                |
| * THF                    |              |           |          |       |        |      |       |        |      |       |        |      |                 |       |        |                  |                |
| * DICHLOROFLUOROMETHANE  |              | Nov 26/87 |          |       |        |      |       | 5.39   |      |       |        |      |                 |       |        |                  |                |
|                          |              | Dec 1/87  |          |       |        |      |       | 36.26* |      |       |        |      |                 |       |        |                  |                |
|                          |              | Dec 7/87  |          |       |        |      |       | 21.07* |      |       |        |      |                 |       |        |                  |                |

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| VOLATILE COMPOUNDS       | MDL<br>(ppb) | DATE      | MONITORS |      |      |      |       |        |      |        |         |          |         |  |
|--------------------------|--------------|-----------|----------|------|------|------|-------|--------|------|--------|---------|----------|---------|--|
|                          |              |           | 28-I     | 29-I | 30-I | 32-I | 32-II | 32-III | 34-I | HC15-I | HC15-II | HC15-III | HC15-IV |  |
| 1,3-DICHLOROBENZENE      | 1.0          | Sep 15/87 | --       | --   | --   | --   | --    | --     | --   | --     | --      | --       | --      |  |
|                          |              | Nov 18/87 |          |      |      |      |       |        |      |        |         |          |         |  |
|                          |              | Nov 26/87 | --       | --   | --   | --   | --    | --     | --   | --     | --      | --       | --      |  |
|                          |              | Dec 1/87  |          |      |      |      |       |        |      |        |         |          |         |  |
|                          |              | Dec 7/87  |          |      |      |      |       |        |      |        |         |          |         |  |
| 1,4-DICHLOROBENZENE      | 1.0          | Sep 15/87 | --       | --   | --   | --   | --    | --     | --   | --     | --      | --       | --      |  |
|                          |              | Nov 18/87 |          |      |      |      |       |        |      |        |         |          |         |  |
|                          |              | Nov 26/87 | --       | --   | --   | --   | --    | --     | --   | --     | --      | --       | --      |  |
|                          |              | Dec 1/87  |          |      |      |      |       |        |      |        |         |          |         |  |
|                          |              | Dec 7/87  |          |      |      |      |       |        |      |        |         |          |         |  |
| 1,2-DICHLOROBENZENE      | 1.0          | Sep 15/87 | --       | --   | --   | --   | --    | --     | --   | --     | --      | --       | --      |  |
|                          |              | Nov 18/87 |          |      |      |      |       |        |      |        |         |          |         |  |
|                          |              | Nov 26/87 | --       | --   | --   | --   | --    | --     | --   | --     | --      | --       | --      |  |
|                          |              | Dec 1/87  |          |      |      |      |       |        |      |        |         |          |         |  |
|                          |              | Dec 7/87  |          |      |      |      |       |        |      |        |         |          |         |  |
| CIS-1,2-DICHLOROETHYLENE | 1.0          | Sep 15/87 | TR       | --   | --   | TR   | TR    | TR     | --   | --     | --      | --       | --      |  |
|                          |              | Nov 18/87 |          |      |      |      |       |        |      |        |         |          |         |  |
|                          |              | Nov 26/87 | 2.05     | --   | --   | TR   | TR    | TR     | --   | --     | --      | --       | --      |  |
|                          |              | Dec 1/87  |          |      |      |      |       |        |      |        |         |          |         |  |
|                          |              | Dec 7/87  |          |      |      |      |       |        |      |        |         |          |         |  |
| * 2-BUTANONE             |              |           |          |      |      |      |       |        |      |        |         |          |         |  |
| * THF                    |              |           |          |      |      |      |       |        |      |        |         |          |         |  |
| * DICHLOROFLUOROMETHANE  |              | Nov 26/87 |          |      |      |      |       |        |      |        |         |          |         |  |
|                          |              | Dec 1/87  |          |      |      |      |       |        |      |        |         |          |         |  |
|                          |              | Dec 7/87  |          |      |      |      |       |        |      |        |         |          |         |  |

TR = TRACE AMOUNT DETECTED  
 -- = NONE DETECTED  
 MDL = METHOD DETECTION LIMIT  
 \* = SEMIQUANTITATIVE VALUES



**APPENDIX V**  
**SURFACE WATER ANALYSES**

BURLINGTON LANDFILL SITE  
 PROJECT 87-224  
 SURFACE WATER ANALYSES ; UP TO MAY 1987 - MOE LABORATORY  
 AFTER MAY 1987 - HALTON LABORATORY

| STATION | DATE      | COND                | HARD | ALK  | pH  | CHLORIDE   | TOTAL<br>SOLIDS | DISSOLVED<br>SOLIDS | SUSPENDED<br>SOLIDS | IRON       | PHOSPHOROUS<br>(TOTAL) | SOLUBLE<br>PHOSPHATES | TOTAL<br>KJELDAHL<br>NITROGEN | AMMONIUM<br>NH4 | NITRATES<br>NO3 | NITRITE<br>NO2 | PHENOLICS |
|---------|-----------|---------------------|------|------|-----|------------|-----------------|---------------------|---------------------|------------|------------------------|-----------------------|-------------------------------|-----------------|-----------------|----------------|-----------|
|         |           | COND25<br>umho's/cm | mg/L | mg/L |     | CL<br>mg/L | RST<br>mg/L     | RSF<br>mg/L         | RSP<br>mg/L         | FE<br>mg/L | P<br>mg/L              | P<br>mg/L             | TKN<br>mg/L                   | mg/L            | mg/L            | mg/L           | ug/L      |
| SW1-A   | 22-May-85 | 669                 | 316  | 260  | 8.1 | 42         | 452             | 452                 | 0.0                 | 0.16       | 0.04                   | <.01                  | 0.40                          | <.05            | 0.40            | 0.005          | 0.4       |
|         | 10-Jul-85 | 696                 | 321  | 276  | 8.1 | 53         | 487             | 474                 | 12.9                |            |                        |                       |                               |                 | 0.20            | 0.010          | 0.6       |
|         | 22-Nov-85 | 381                 | 169  | 137  | 8.1 | 17         | 248             | 248                 | 0.0                 |            | 0.06                   | <.01                  | 0.30                          | <.05            | 0.50            | <.005          | 0.2       |
|         | 19-Dec-85 | 528                 | 238  | 183  | 8.2 | 35         | 318             | 318                 | 0.0                 |            | 0.02                   | <.01                  | 0.30                          | <.05            | 0.30            | <.005          | 0.6       |
|         | 11-Apr-86 | 483                 | 223  | 180  | 8.5 |            | 307             | 301                 | 5.8                 |            |                        | 0.02                  |                               | <.05            | 0.30            | 0.08           | 0.4       |
|         | 29-Apr-86 | 577                 | 274  | 234  | 8.5 | 39         | 333             | 319                 | 14.4                |            | <.02                   | <.01                  | <.20                          | <.05            | <.05            | 0.005          | 0.8       |
|         | 08-May-86 | 596                 | 286  | 245  | 8.5 | 39         | 393             | 389                 | 4.3                 |            | 0.20                   | <.01                  | 0.20                          | 1.35            | 0.05            | 0.010          | 0.6       |
|         | 09-Jul-86 | 723                 | 315  | 282  | 8.2 | 55         | 604             | 545                 | 59.4                |            | 0.10                   | 0.01                  | 0.40                          | <.05            | 0.05            | 0.015          | 1.2       |
|         | 02-Dec-86 | 642                 | 280  | 224  | 8.2 | 47         |                 | 395                 |                     |            | 0.05                   | 0.05                  | 0.30                          | 0.15            | 0.45            | 0.010          | 0.6       |
|         | 18-Aug-87 | 660                 | 373  | 272  | 8.6 | 84         |                 |                     | 200.0               | 3.80       | 0.12                   |                       | 0.24                          |                 | 0.94            | <.02           | <.5       |
|         | 01-Dec-87 | 410                 | 248  | 180  | 8.3 | 87         |                 |                     | 4.0                 | 0.16       | <.02                   |                       | <.05                          | <.01            | 1.50            | <.02           | 1.9       |
| SW2     | 22-May-85 | 714                 | 335  | 280  | 8.1 | 38         | 516             | 516                 | 0.0                 | 0.11       | 0.04                   | <.01                  | 0.20                          | <.05            | 0.55            | 0.010          | 0.4       |
|         | 10-Jul-85 | 678                 | 328  | 275  | 8.2 | 39         | 483             | 474                 | 9.1                 |            |                        | 0.01                  |                               | <.05            | 0.30            | 0.030          | 8.0       |
|         | 17-Sep-85 | 883                 | 420  | 324  | 8.0 | 51         |                 |                     | 23.2                | <.03       | 0.02                   |                       | 0.60                          | <.05            | <.05            | <.005          | 0.4       |
|         | 17-Oct-85 | 834                 | 383  | 291  | 7.8 | 42         | 522             | 522                 | 0.0                 | <.03       | 0.12                   | <.01                  | 0.30                          | <.05            | 0.20            | <.005          | 0.2       |
|         | 22-Nov-85 | 397                 | 177  | 146  | 8.1 | 16         | 258             | 258                 | 0.0                 |            | 0.08                   | <.01                  | 0.40                          | <.05            | 0.50            | <.005          | 0.2       |
|         | 08-May-86 | 646                 | 326  | 275  | 8.6 | 34         | 422             | 417                 | 5.1                 |            | 0.04                   | <.01                  | 0.40                          | 0.20            | <.05            | 0.010          | 0.8       |
|         | 09-Jul-86 | 785                 | 374  | 310  | 8.1 | 49         | 548             | 523                 | 25.1                |            | 0.08                   | 0.08                  | 0.20                          | 0.15            | 0.40            | 0.015          | 1.8       |
|         | 02-Dec-86 | 570                 | 272  | 230  | 8.3 | 31         |                 | 361                 |                     |            | 0.05                   | 0.06                  | 0.20                          | 0.15            | 0.45            | 0.005          | 0.6       |
|         | 18-Aug-87 | 700                 | 407  | 346  | 8.3 | 65         |                 |                     | 13.0                | <.4        | <.02                   |                       | 0.51                          |                 | 0.54            | <.02           | <.5       |
|         | 01-Dec-87 | 370                 | 268  | 198  | 8.3 | 60         |                 |                     | 4.5                 | 0.18       | <.02                   |                       | <.05                          | <.01            | 1.02            | 0.05           | 1.4       |
|         |           |                     |      |      |     |            |                 |                     |                     |            |                        |                       |                               |                 |                 |                |           |
| SW3     | 22-May-85 | 792                 | 385  | 317  | 8.2 | 36         | 530             | 530                 | 0.0                 | 0.08       | 0.04                   | <.01                  | 0.20                          | <.05            | 0.10            | 0.005          | 0.4       |
|         | 10-Jul-85 | 676                 | 322  | 281  | 8.2 | 34         | 473             | 466                 | 7.0                 | 0.32       |                        | 0.01                  |                               | <.05            | 0.10            | 0.010          | 6.4       |
|         | 22-Nov-85 | 420                 | 190  | 152  | 8.0 | 16         | 274             | 264                 | 10.5                |            | 0.08                   | <.01                  | 0.40                          | <.05            | 0.40            | <.005          | 0.2       |
|         | 19-Dec-85 | 647                 | 303  | 234  | 8.3 | 35         | 403             | 403                 | 0.0                 |            | 0.04                   | <.01                  | 0.30                          | <.05            | 0.35            | <.005          | 0.2       |
|         | 11-Apr-86 | 555                 | 267  | 219  | 8.6 | 32         | 366             | 356                 | 10.0                |            | 0.02                   | 0.01                  | 0.20                          | <.05            | 0.10            | <.005          | 0.2       |
|         | 29-Apr-86 | 651                 | 311  | 269  | 8.5 | 33         | 409             | 347                 | 61.6                |            | <.02                   | 0.01                  | <.20                          | <.05            | <.05            | 0.005          | 2.0       |
|         | 08-May-86 | 707                 | 352  | 298  | 8.5 | 33         | 496             | 423                 | 73.2                |            | 0.08                   | <.01                  | 0.40                          | <.05            | <.05            | 0.015          | 0.6       |
|         | 09-Jul-86 | 759                 | 367  | 328  | 8.4 | 39         | 664             | 616                 | 47.9                |            | 0.12                   | 0.06                  | 0.40                          | <.05            | 0.20            | 0.040          | 1.4       |
|         | 02-Dec-86 | 625                 | 299  | 246  | 8.1 | 32         |                 | 398                 |                     |            | 0.05                   | 0.08                  | 0.20                          | 0.15            | 0.40            | 0.005          | 0.4       |
|         | 01-Dec-87 | 400                 | 300  | 240  | 8.3 | 50         |                 |                     | 8.5                 | 0.34       | <.02                   |                       | <.05                          | 0.01            | 0.66            | <.02           | 0.9       |
|         |           |                     |      |      |     |            |                 |                     |                     |            |                        |                       |                               |                 |                 |                |           |
| SW4     | 22-May-85 | 900                 | 410  | 378  | 7.9 | 16         | 680             | 592                 | 88.3                | 2.26       | 0.10                   | <.01                  | 0.50                          | <.05            | 0.10            | 0.065          | 1.2       |
|         | 08-May-86 | 647                 | 391  | 275  | 8.5 | 12         | 438             | 402                 | 35.7                |            | 0.04                   | <.01                  | 0.40                          | <.05            | <.05            | 0.010          | ~.6       |
|         | 01-Dec-87 | 970                 | 587  | 236  | 8.3 | 55         |                 |                     | 8.5                 | <.08       | <.02                   |                       | 0.14                          | <.01            | 11.31           | 0.01           | 2.1       |
| SW5     | 08-May-86 | 797                 | 395  | 320  | 8.3 | 22         | 551             | 474                 | 77.4                |            | 0.06                   | <.01                  | 0.40                          | <.05            | <.05            | 0.005          | 1.0       |
|         | 02-Dec-86 | 931                 | 297  | 362  | 8.3 | 21         |                 | 557                 |                     |            | 0.03                   | 0.09                  | 0.20                          | 0.15            | 0.15            | 0.005          | 0.2       |
|         | 01-Dec-87 | 500                 | 372  | 212  | 8.2 | 53         |                 |                     | 9.5                 | 0.24       | <.02                   |                       | 0.06                          | 0.01            | 3.58            | <.02           | 14.8      |

## BURLINGTON LANDFILL SITE

PROJECT 87-224

SURFACE WATER ANALYSES ; UP TO MAY 1987 - MOE LABORATORY

AFTER MAY 1987 - HALTON LABORATORY

| STATION | DATE      | BOD5 | COD  | DOC  | DIC  | TOTAL<br>COLIFORMS | FECAL<br>COLIFORMS | FECAL<br>STREPT |
|---------|-----------|------|------|------|------|--------------------|--------------------|-----------------|
|         |           | mg/L | mg/L | mg/L | mg/L | cnt/100ml          | cnt/100ml          | cnt/100ml       |
| SW1-A   | 22-May-85 | 0.5  | 10   | 2.3  | 59.0 | 600                | 370                | 100             |
|         | 10-Jul-85 | 0.8  | 22   | 2.9  | 65.0 | 50000              | 3500               | 520             |
|         | 22-Nov-85 | 0.3  | 12   | 4.3  | 33.2 | 1200               | 40                 | 70              |
|         | 19-Dec-85 | 0.6  |      | 2.8  | 45.0 | 160                | 20                 | 20              |
|         | 11-Apr-86 | 0.3  | 2    |      |      | 420                | 40                 | 20              |
|         | 29-Apr-86 | 0.7  | <2   | 3.1  | 43.0 | 120                | 16                 | 8               |
|         | 08-May-86 | 0.3  | 4    | 7.0  | 53.0 | 440                | 36                 | 4               |
|         | 09-Jul-86 | 4.0  | 94   | 3.4  | 55.0 |                    | 610                | 560             |
|         | 02-Dec-86 |      | 10   | 3.7  | 47.0 |                    | 350                | 130             |
|         | 18-Aug-87 | 3.9  | 38   | 6.0  | 58.4 | 6600               | 234                | 930             |
|         | 01-Dec-87 | <1   | 70   |      |      | 4400               | 390                |                 |
| SW2     | 22-May-85 | 0.3  | 26   | 2.5  | 65.0 | 1000               | 30                 | 90              |
|         | 10-Jul-85 | 0.8  | 22   | 2.9  | 64.0 | 16000              | 1020               | 480             |
|         | 17-Sep-85 | 0.4  | 8    | 2.4  | 66.0 | 2300               | 60                 | 220             |
|         | 17-Oct-85 | 0.6  | 6    | 2.6  | 69.0 | 240                | <10                | <10             |
|         | 22-Nov-85 | 0.3  | 16   | 4.6  | 34.8 | 2300               | 130                | 140             |
|         | 08-May-86 | 0.3  | <2   | 2.1  | 60.0 | 540                | 100                | 36              |
|         | 09-Jul-86 | 1.8  | 6    | 10.5 | 72.0 |                    | 950                | 490             |
|         | 02-Dec-86 |      | <2   | 3.2  | 45.0 |                    | 290                | 270             |
|         | 18-Aug-87 | 8.4  | 16   | 11.4 | 63.5 | 8800               | 350                | 620             |
|         | 01-Dec-87 | <1   | 72   |      |      | 3600               | 900                |                 |
| SW3     | 22-May-85 | 0.4  | 36   | 3.3  | 73.0 | 1500               | 120                | 170             |
|         | 10-Jul-85 | 0.8  | 24   | 4.5  | 64.0 | 1900               | 460                | 420             |
|         | 22-Nov-85 | 0.3  | 12   | 4.8  | 36.8 | 1400               | 460                | 100             |
|         | 19-Dec-85 | 0.5  |      | 3.0  | 57.0 | 300                | 40                 | 100             |
|         | 11-Apr-86 | 0.1  | 12   | 2.1  | 40.6 | 170                | <20                | 20              |
|         | 29-Apr-86 | 0.6  | <2   | 2.7  | 44.0 | 370                | 132                | 136             |
|         | 08-May-86 | 0.3  | 8    | 2.4  | 61.0 | 1000               | 410                | 80              |
|         | 09-Jul-86 | 1.5  | <2   | 4.7  | 67.0 |                    | 5700               | 640             |
|         | 02-Dec-86 |      | <2   | 3.5  | 50.0 |                    | 220                | 230             |
|         | 01-Dec-87 | <1   | 116  |      |      | 6800               | 440                |                 |
| SW4     | 22-May-85 | 0.6  | 18   | 3.0  | 76.0 | 129000             | 860                | 2800            |
|         | 08-May-86 | 0.3  | 10   | 2.9  | 69.0 | 1400               | 96                 | 72              |
|         | 01-Dec-87 | <1   | <10  |      |      | 6900               | 380                |                 |
| SW5     | 08-May-86 | 0.3  | 14   | 3.8  | 61.0 | 5200               | 370                | 300             |
|         | 02-Dec-86 |      | <2   | 3.9  | 56.0 |                    | 110                | 170             |
|         | 01-Dec-87 | <1   | 77   |      |      | 6700               | 530                |                 |

BURLINGTON LANDFILL SITE  
 PROJECT 87-224  
 SURFACE WATER ANALYSES ; UP TO MAY 1987 - MOE LABORATORY  
 AFTER MAY 1987 - HALTON LABORATORY

| STATION | DATE      | COND                | HARD | ALK  | pH  | CHLORIDE   | TOTAL SOLIDS | DISSOLVED SOLIDS | SUSPENDED SOLIDS | IRON       | PHOSPHOROUS (TOTAL) | SOLUBLE PHOSPHATES | TOTAL KJELDAHL NITROGEN | AMMONIUM    | NITRATES    | NITRITE     | PHENOLICS |
|---------|-----------|---------------------|------|------|-----|------------|--------------|------------------|------------------|------------|---------------------|--------------------|-------------------------|-------------|-------------|-------------|-----------|
|         |           | COND25<br>umho's/cm | mg/L | mg/L |     | CL<br>mg/L | RST<br>mg/L  | RSF<br>mg/L      | RSP<br>mg/L      | FE<br>mg/L | P<br>mg/L           | P<br>mg/L          | TKN<br>mg/L             | NH4<br>mg/L | NO3<br>mg/L | NO2<br>mg/L | ug/L      |
| SW6     | 22-Nov-85 | 554                 | 277  | 235  | 8.2 | 8          | 417          | 367              | 49.9             |            | 0.12                | <.01               | 0.60                    | <.05        | 0.10        | 0.350       | 0.2       |
| SW7     | 22-Nov-85 | 647                 | 242  | 178  | 8.3 | 38         | 438          | 411              | 27.2             |            | 0.10                | <.01               | 0.50                    | <.05        | <.05        | 0.030       | 0.2       |
|         | 08-May-86 | 1139                | 521  | 329  | 8.5 | 68         | 863          | 789              | 74.5             |            | 0.10                | <.01               | 0.60                    | <.05        | <.05        | 0.035       | 12.8      |
| SW10    | 22-Nov-85 | 975                 | 471  | 270  | 8.3 | 46         | 756          | 699              | 56.8             |            | 1.42                | 1.02               | 1.05                    | <.05        | 1.15        | 0.235       | 0.2       |
| SW11    | 22-Nov-85 | 950                 | 442  | 259  | 8.2 | 46         | 721          | 672              | 49.2             |            | 1.74                | 1.20               | 0.85                    | <.05        | 1.15        | 0.235       | <.2       |
|         | 01-Dec-87 | 600                 | 380  | 180  | 8.2 | 61         |              |                  | 20.0             | 0.28       | <.02                |                    | 0.18                    | 0.04        | 2.34        | <.02        | 0.6       |
| SW12    | 10-Jul-85 | 928                 |      | 68   | 8.1 | 132        | 759          | 724              | 35.4             | 0.96       |                     |                    |                         |             | 0.55        | 0.050       | 1.4       |
|         | 17-Oct-85 | 1560                | 643  | 119  | 8.0 | 207        |              |                  |                  | <.03       |                     |                    |                         |             |             |             | 0.2       |
|         | 22-Nov-85 | 781                 | 317  | 177  | 7.9 | 57         | 577          | 510              | 66.9             |            | 0.50                | 0.18               | 1.35                    | <.05        | 1.50        | 0.130       | 8.2       |
|         | 19-Dec-85 | 2750                | 927  | 481  | 7.6 | 418        |              |                  |                  |            | 0.15                | <.01               | 9.60                    | 7.10        | <.05        | 0.025       | 68.0      |
|         | 11-Apr-86 | 2840                | 843  | 217  | 8.2 |            | 2080         | 2000             | 82.6             |            |                     |                    |                         |             |             |             | 3.2       |
|         | 29-Apr-86 | 1930                | 548  | 199  | 8.3 | 172        | 1470         | 1240             | 229.0            |            | 0.15                | 0.02               | 1.00                    | <.05        | 0.40        | 0.025       | 5.2       |
|         | 08-May-86 | 2060                | 584  | 274  | 8.4 | 342        | 1780         | 1410             | 376.0            |            | 0.44                | <.01               | 1.20                    | <.05        | 0.45        | 0.015       | 6.2       |
|         | 02-Dec-86 | 1395                | 556  | 319  | 8.0 | 142        |              | 965              |                  |            | 0.06                | 0.14               | 2.00                    | 1.30        | 0.90        | 0.320       | 4.0       |
|         | 22-Nov-85 | 557                 | 215  | 178  | 8.1 | 32         | 392          | 363              | 28.6             |            | 0.16                | <.01               | 0.50                    | <.05        | <.05        | 0.015       | 0.2       |
|         | 29-Apr-86 | 3820                | 841  | 314  | 8.2 | 487        | 2410         | 2360             | 53.7             |            | <.02                | 0.03               | 0.20                    | <.05        | 0.05        | 0.010       | 2.0       |
| SW13    | 08-May-86 | 4780                | 1069 | 330  | 8.2 | 1101       | 3390         | 3290             | 103.0            |            | 0.08                | <.01               | 0.60                    | <.05        | <.05        | 0.010       | 6.2       |
|         | 02-Dec-86 | 930                 | 275  | 262  | 8.0 | 83         |              | 599              |                  |            | 0.06                | 0.04               | 0.50                    | 0.10        | 0.15        | 0.010       | 0.4       |
|         | 01-Dec-87 | 660                 | 395  | 200  | 8.2 | 120        |              |                  | 43.0             | 1.12       | <.02                |                    | 0.10                    | 0.11        | 0.92        | <.02        | 4.2       |
|         |           |                     |      |      |     |            |              |                  |                  |            |                     |                    |                         |             |             |             |           |
| SW14    | 22-May-85 | 826                 | 362  | 263  | 8.2 | 55         | 566          | 566              | 0.0              | 0.04       | 0.02                | <.01               | 0.20                    | <.05        | 0.10        | <.005       | 1.0       |
|         | 10-Jul-85 | 837                 | 321  | 247  | 8.1 | 99         | 674          | 640              | 34.0             | 0.86       |                     | <.01               |                         | <.05        | 0.10        | 0.010       | 7.4       |
|         | 17-Sep-85 | 6660                | 822  | 321  | 7.6 | 448        |              |                  | 31.2             | 0.09       | 0.04                | <.01               | 0.70                    | <.05        | <.05        | <.005       | 0.2       |
|         | 17-Oct-85 | 3020                | 721  | 238  | 8.1 | 621        |              |                  |                  | 0.05       |                     | <.01               | 0.80                    | <.05        | <.05        | 0.010       | 2.4       |
|         | 22-Nov-85 | 459                 | 200  | 159  | 8.1 | 22         | 304          | 283              | 20.7             |            | 0.14                | <.01               | 0.50                    | <.05        | 0.35        | 0.015       | 0.8       |
|         | 19-Dec-85 | 750                 | 338  | 247  | 8.0 | 51         | 457          | 446              | 11.1             |            | 0.02                | <.01               | 0.30                    | <.05        | 0.30        | 0.015       | 1.0       |
|         | 11-Apr-86 | 650                 | 291  | 222  | 8.6 | 57         | 446          | 410              | 36.3             |            | 0.04                | <.01               | 0.20                    | <.05        | 0.05        | <.005       | 0.2       |
|         | 29-Apr-86 | 726                 | 324  | 270  | 8.5 | 52         | 427          | 397              | 30.2             |            | <.02                | 0.04               | <.20                    | <.05        | 0.05        | 0.005       | 0.8       |
|         | 08-May-86 | 771                 | 369  | 295  | 8.5 | 51         | 519          | 488              | 30.9             |            | 0.06                | <.01               | 0.40                    | <.05        | <.05        | 0.050       | 1.2       |
|         | 09-Jul-86 | 861                 | 399  | 303  | 8.3 | 74         | 770          | 657              | 113.0            |            | 0.14                | 0.04               | 0.60                    | <.05        | 0.10        | 0.030       | 0.6       |
|         | 12-May-87 | 885                 | 156  | 320  | 8.1 | 45         |              | 528              |                  | 0.09       | <.010               | 0.12               | <.05                    | 0.05        | 0.05        | <.005       | <.2       |
|         | 18-Aug-87 | 1620                | 487  | 121  | 8.6 | 382        |              |                  | 41.0             | <.4        | <.02                |                    | 0.25                    |             | 0.24        | <.02        | 2.6       |
|         | 21-Oct-87 | 1380                | 774  | 4120 | 8.0 | 445        |              |                  | 3.6              | 0.20       | 0.03                |                    | 0.06                    | <.01        | 0.77        | <.02        |           |
|         | 01-Dec-87 | 470                 | 286  | 200  | 8.3 | 78         |              |                  | 31.0             | 1.60       | <.02                |                    | 0.13                    | 0.09        | 0.62        | <.02        | 1.3       |

## BURLINGTON LANDFILL SITE

PROJECT 87-224

SURFACE WATER ANALYSES ; UP TO MAY 1987 - MOE LABORATORY

AFTER MAY 1987 - HALTON LABORATORY

| STATION | DATE      | BOD5  | COD  | DOC  | DIC   | TOTAL<br>COLIFORMS | FECAL<br>COLIFORMS | FECAL<br>STREPT |
|---------|-----------|-------|------|------|-------|--------------------|--------------------|-----------------|
|         |           | mg/L  | mg/L | mg/L | mg/L  | cnt/100ml          | cnt/100ml          | cnt/100ml       |
| SW6     | 22-Nov-85 | 1.3   | 30   | 8.2  | 59.0  | 1300               | 300                | 700             |
| SW7     | 22-Nov-85 | 1.1   | 18   | 7.0  | 45.0  | 22000              | 280                | 620             |
|         | 08-May-86 | 0.5   | 32   | 4.6  | 67.0  | 22000              | 20                 | 60              |
| SW10    | 22-Nov-85 | 5.8   | 34   | 8.5  | 66.0  | 26000              | 500                | 580             |
| SW11    | 22-Nov-85 | 3.3   | 62   | 8.7  | 62.0  | 34000              | 440                | 980             |
|         | 01-Dec-87 | <1    | 55   |      |       | 6700               | 800                |                 |
| SW12    | 10-Jul-85 | 1.2   | 46   | 4.3  | 14.6  | 5000               | 200                | 100             |
|         | 17-Oct-85 | 5.5   |      | 6.3  | 27.8  | 38000              | 80                 | 100             |
|         | 22-Nov-85 | 2.0   | 38   | 10.3 | 43.0  | 33000              | 480                | 720             |
|         | 19-Dec-85 | 130.0 |      | 83.0 | 113.0 | 69000              | <1000              | 7000            |
|         | 11-Apr-86 | 2.3   | 90   |      |       | 100                | <20                | <20             |
|         | 29-Apr-86 | 7.5   | 34   | 5.2  | 28.6  | 180                | 40                 | 10              |
|         | 08-May-86 | 1.8   | 38   | 3.7  | 58.0  | 900                | 240                | 40              |
|         | 02-Dec-86 |       | 6    | 8.6  | 60.0  |                    | 80                 | 340             |
| SW13    | 22-Nov-85 | 0.7   | 38   | 7.1  | 44.0  | 10000              | 240                | 360             |
|         | 29-Apr-86 | 1.8   | 24   | 5.3  | 49.1  | 4200               | 180                | 310             |
|         | 08-May-86 | 0.5   | 28   | 8.5  | 65.0  | 1200               | <20                | 40              |
|         | 02-Dec-86 |       | 6    | 7.4  | 48.0  |                    | <10                | 110             |
|         | 01-Dec-87 | <1    | 39   |      |       | 7100               | 420                |                 |
| SW14    | 22-May-85 | 0.4   | 14   | 3.3  | 63.0  | 340                | 40                 | 20              |
|         | 10-Jul-85 | 2.6   | 34   | 4.9  | 55.0  | 29000              | 2900               | 100             |
|         | 17-Sep-85 | 1.1   | 32   |      | 76.0  | 3100               | 600                | 960             |
|         | 17-Oct-85 | 4.6   | 26   | 5.5  | 54.0  | 10000              | 40                 | <20             |
|         | 22-Nov-85 | 1.0   | 6    | 5.0  | 36.8  | 2800               | 140                | 140             |
|         | 19-Dec-85 | 0.7   |      | 3.3  | 59.0  | 240                | 60                 | 20              |
|         | 11-Apr-86 | 0.1   | 18   | 2.1  | 39.4  | 100                | 20                 | 20              |
|         | 29-Apr-86 | 0.8   | <2   | 2.9  | 42.7  | 180                | 156                | 96              |
|         | 08-May-86 | 0.2   | 2    | 2.4  | 59.0  | 620                | 130                | 30              |
|         | 09-Jul-86 | 2.2   | <2   | 5.0  | 64.0  |                    | 3200               | 690             |
|         | 12-May-87 |       | 0    | 3.5  | 59.0  |                    | 360                | 100             |
|         | 18-Aug-87 | 10.2  | 29   | 6.7  | 54.5  | 4400               | 400                | 290             |
|         | 21-Oct-87 | <1    | 153  |      |       | 9000               | 4400               | 40              |
|         | 01-Dec-87 | <1    | 23   |      |       | 6900               | 510                |                 |

BURLINGTON LANDFILL SITE  
 PROJECT 87-224  
 SURFACE WATER ANALYSES ; UP TO MAY 1987 - MOE LABORATORY  
 AFTER MAY 1987 - HALTON LABORATORY

| STATION | DATE      | COND                | HARD | ALK  | pH  | CHLORIDE   | TOTAL SOLIDS | DISSOLVED SOLIDS | SUSPENDED SOLIDS | IRON       | PHOSPHOROUS (TOTAL) | SOLUBLE PHOSPHATES | TOTAL KJELDAHL NITROGEN | AMMONIUM    | NITRATES    | NITRITE     | PHENOLICS |
|---------|-----------|---------------------|------|------|-----|------------|--------------|------------------|------------------|------------|---------------------|--------------------|-------------------------|-------------|-------------|-------------|-----------|
|         |           | COND25<br>umho's/cm | mg/L | mg/L |     | CL<br>mg/L | RST<br>mg/L  | RSF<br>mg/L      | RSP<br>mg/L      | FE<br>mg/L | P<br>mg/L           | P<br>mg/L          | TKN<br>mg/L             | NH4<br>mg/L | NO3<br>mg/L | NO2<br>mg/L | ug/L      |
| SW15    | 22-May-85 | 1390                | 610  | 458  | 7.6 | 58         | 973          | 964              | 9.6              | 0.30       | 0.05                | <.01               | 0.75                    | <.05        | 0.10        | <.005       | 1.8       |
|         | 10-Jul-85 | 1293                | 690  | 498  | 7.8 | 64         | 1080         | 1040             | 45.0             | 0.82       | 0.15                | 0.01               | 1.00                    | 0.10        | 0.10        | 0.015       | 5.0       |
|         | 22-Nov-85 | 415                 | 189  | 152  | 8.3 | 16         | 267          | 260              | 7.2              |            | 0.06                | <.01               | 0.40                    | <.05        | 0.40        | 0.010       | 0.8       |
|         | 11-Apr-86 | 552                 | 258  | 214  | 8.6 | 33         | 353          | 341              | 11.9             |            | 0.02                | <.01               | 0.20                    | <.05        | <.05        | 0.005       | 0.6       |
|         | 29-Apr-86 | 638                 | 313  | 268  | 8.5 | 33         | 421          | 354              | 66.7             |            | <.02                | 0.05               | 0.40                    | 0.10        | 0.10        | 0.010       | 0.4       |
|         | 08-May-86 | 690                 | 343  | 295  | 8.5 | 34         | 433          | 426              | 7.4              |            | 0.04                | <.01               | 0.20                    | <.05        | <.05        | 0.005       | 1.2       |
|         | 01-Dec-87 | 450                 | 314  | 244  | 8.1 | 60         |              |                  | 5.0              | <.08       | <.02                |                    | 0.06                    | <.01        | 0.52        | <.02        | 0.7       |
| SW16    | 07-Aug-85 | 878                 | 352  | 216  | 8.1 | 85         | 635          | 635              | 0.0              | 0.13       | 0.04                | <.01               | 0.50                    | <.05        | 0.30        | 0.010       | 0.6       |
|         | 17-Sep-85 | 883                 | 347  | 213  | 8.1 | 85         |              |                  | 6.8              | 0.04       | 0.06                | <.01               | 0.80                    | <.05        | 0.20        | <.005       | 0.2       |
|         | 17-Oct-85 | 742                 | 294  | 185  | 8.1 | 67         | 472          | 465              | 7.1              | <.03       |                     | <.01               | 0.80                    | <.05        | 1.00        | 0.120       | 0.6       |
|         | 22-Nov-85 | 626                 | 296  | 183  | 8.4 | 34         | 448          | 429              | 19.0             |            | 0.08                | <.01               | 0.60                    | <.05        | 0.90        | 0.035       | <.2       |
|         | 19-Dec-85 | 1035                | 418  | 258  | 8.1 | 110        | 650          | 632              | 18.3             |            | 0.06                | <.01               | 0.50                    | <.05        | 1.15        | 0.100       | 0.6       |
|         | 11-Apr-86 |                     | 301  | 2    | 6.1 |            |              |                  |                  |            |                     |                    |                         |             |             |             | 0.8       |
|         | 29-Apr-86 | 824                 | 355  | 243  | 8.5 | 62         | 494          | 481              | 13.3             |            | <.02                | 0.05               | 0.40                    | 0.05        | 0.40        | 0.185       | 2.0       |
|         | 08-May-86 | 832                 | 366  | 245  | 8.4 | 85         | 643          | 582              | 60.9             |            | 0.10                | <.01               | 0.60                    | <.05        | 0.35        | 0.015       | 2.2       |
|         | 09-Jul-86 | 778                 | 307  | 193  | 8.2 | 85         | 536          | 518              | 17.6             |            | 0.12                | 0.02               | 0.60                    | <.05        | 0.65        | 0.020       | 0.8       |
|         | 10-Sep-86 | 1080                | 447  |      | 8.0 |            | 808          | 803              | 5.4              |            | 0.04                | 0.01               | 0.60                    | 1.25        | <.05        | <.005       | 0.8       |
|         | 02-Dec-86 | 800                 | 305  | 253  | 8.2 | 41         |              | 531              |                  |            | 0.06                | <.01               | 0.70                    | 0.05        | 1.05        | 0.220       | 0.2       |
|         | 18-Aug-87 | 880                 | 361  | 215  | 7.1 | 127        |              |                  | 5.0              | <.4        | <.02                |                    | 0.27                    | 0.09        | 1.65        | <.02        | <.5       |
|         | 21-Oct-87 | 580                 | 325  | 2240 | 8.1 | 230        |              |                  | 6.0              | <.08       | 0.05                |                    | 0.10                    | <.01        | 1.20        | 0.02        |           |
|         | 01-Dec-87 | 390                 | 260  | 172  | 8.4 | 52         |              |                  | 15.5             | 0.56       | <.02                |                    | 0.12                    | <.01        | 2.20        | <.02        | 4.8       |
| SW17    | 07-Aug-85 | 954                 | 331  | 195  | 8.1 | 125        | 684          | 684              | 0.0              | 0.05       | 0.02                | <.01               | 0.20                    | <.05        | 0.15        | <.005       | 1.6       |
|         | 17-Sep-85 | 1072                | 349  | 192  | 8.1 | 159        | 675          | 671              | 3.9              | <.03       | 0.02                | <.01               | 1.10                    | <.05        | 0.20        | <.005       | 0.2       |
|         | 17-Oct-85 | 747                 | 256  | 167  | 8.6 | 85         | 476          | 476              | 0.0              | 0.05       |                     | <.01               |                         | <.05        | 0.20        | 0.010       | <.2       |
|         | 22-Nov-85 | 737                 | 331  | 210  | 8.3 | 56         | 520          | 508              | 11.9             |            | 0.08                | <.01               | 0.60                    | <.05        | 1.25        | 0.015       | <.2       |
|         | 19-Dec-85 | 1340                | 450  | 204  | 8.2 | 194        | 790          | 779              | 10.7             |            | 0.02                | <.01               | 0.40                    | <.05        | 1.25        | 0.015       | 0.6       |
|         | 11-Apr-86 | 900                 | 291  | 158  | 8.5 | 145        | 605          | 590              | 15.5             |            | 0.02                | <.01               | 0.20                    | <.05        | 0.20        | 0.105       | 0.6       |
|         | 29-Apr-86 | 1044                | 395  | 253  | 8.4 | 78         | 613          | 608              | 5.1              |            | <.02                | 0.03               | 0.20                    | 0.10        | 0.30        | 0.025       | 0.8       |
|         | 08-May-86 | 987                 | 371  | 232  | 8.5 | 140        | 712          | 708              | 4.4              |            | 0.02                | <.01               | 0.40                    | <.05        | 0.20        | 0.030       | 2.2       |
|         | 09-Jul-86 | 976                 | 346  | 210  | 8.2 | 137        | 670          | 663              | 7.4              |            | 0.08                | <.01               | 0.60                    | <.05        | 0.45        | 0.015       | 1.8       |
|         | 10-Sep-86 | 1410                | 474  |      | 7.8 |            | 919          | 909              | 10.3             |            | <.02                | 0.03               | 0.40                    | 0.25        | <.05        | <.005       | 0.6       |
|         | 02-Dec-86 | 2570                | 306  | 197  | 8.7 | 644        |              | 1550             |                  |            | 0.10                | <.05               | 0.50                    | 0.25        | 0.75        | 0.050       | 15.2      |
|         | 18-Aug-87 | 910                 | 318  | 204  | 7.3 | 138        |              |                  | 2.0              | <.4        | <.02                |                    | 0.29                    | 0.03        | 0.73        | <.02        | <.5       |
|         | 21-Oct-87 | 640                 | 245  | 1900 | 8.5 | 195        |              |                  | 2.0              | <.08       | <.02                |                    | 0.05                    | <.01        | 0.78        | <.02        |           |
|         | 01-Dec-87 | 450                 | 283  | 198  | 8.4 | 65         |              |                  | 6.5              | 0.22       | <.02                |                    | 0.13                    | <.01        | 2.35        | 0.02        | 2.6       |
| SW18    | 01-Dec-87 | 900                 | 552  | 230  | 8.3 | 209        |              |                  | 19.0             | 0.20       | <.02                |                    | 0.63                    | 0.52        | 1.54        | 0.04        | 5.2       |
| SW19    | 01-Dec-87 | 870                 | 556  | 230  | 8.3 | 195        |              |                  | 17.0             | 0.14       | <.02                |                    | 0.65                    | 0.55        | 1.41        | <.02        | 1.7       |

## BURLINGTON LANDFILL SITE

PROJECT 87-224

SURFACE WATER ANALYSES ; UP TO MAY 1987 - MOE LABORATORY  
AFTER MAY 1987 - HALTON LABORATORY

| STATION | DATE      | BOD5 | COD  | DOC  | DIC   | TOTAL<br>COLIFORMS | FECAL<br>COLIFORMS | FECAL<br>STREPT |
|---------|-----------|------|------|------|-------|--------------------|--------------------|-----------------|
|         |           | mg/L | mg/L | mg/L | mg/L  | cnt/100ml          | cnt/100ml          | cnt/100ml       |
| SW15    | 22-May-85 | 0.8  | 24   | 6.7  | 113.0 | 5200               | 1060               | 560             |
|         | 10-Jul-85 | 1.8  | 52   | 9.2  | 116.0 | 138000             | 1900               | 1300            |
|         | 22-Nov-85 | 0.7  | 12   | 5.3  | 36.8  | 2600               | 200                | 80              |
|         | 11-Apr-86 | 0.1  | <2   | 2.0  | 37.7  | 420                | <20                | 20              |
|         | 29-Apr-86 | 0.9  | 14   | 2.6  | 46.6  | 320                | 108                | 56              |
|         | 08-May-86 | 0.2  | 2    | 2.2  | 60.0  | 660                | 176                | 80              |
|         | 01-Dec-87 | <1   | 36   |      |       | 4400               | 550                |                 |
| SW16    | 07-Aug-85 | 0.8  | 20   | 6.1  | 49.0  | 4900               | 1040               | 790             |
|         | 17-Sep-85 | 0.6  | 14   | 4.3  | 38.0  | 2900               | 900                | 580             |
|         | 17-Oct-85 | 1.2  | 12   | 3.9  | 43.0  | 2900               | 1420               | 140             |
|         | 22-Nov-85 | 1.9  | 24   | 5.5  | 46.0  | 4600               | 700                | 240             |
|         | 19-Dec-85 | 0.9  |      | 3.7  | 63.0  | 1000               | <100               | <100            |
|         | 11-Apr-86 | 0.3  | 6    |      |       | 280                | <20                | 20              |
|         | 29-Apr-86 | 0.2  | 14   | 3.3  | 38.2  | 540                | 116                | 40              |
|         | 08-May-86 | 0.9  | 8    | 3.2  | 53.0  | 1800               | 312                | 72              |
|         | 09-Jul-86 | 2.3  | <2   | 4.8  | 42.0  |                    | 860                | 560             |
|         | 10-Sep-86 | 0.3  | 14   |      |       |                    | 660                | 500             |
|         | 02-Dec-86 |      | <2   | 3.8  | 37.0  |                    | 1840               | 600             |
|         | 18-Aug-87 | 0.9  | 13   | 8.0  | 52.3  | 60000              | 3150               | 880             |
|         | 21-Oct-87 | <1   | 34   |      |       | 2700               | 500                | 295             |
|         | 01-Dec-87 | <1   | 38   |      |       | 7700               | 1510               |                 |
| SW17    | 07-Aug-85 | 0.4  | 16   | 3.8  | 45.0  | 1500               | 120                | 70              |
|         | 17-Sep-85 | 0.3  | 10   | 2.7  | 42.0  | 1400               | 40                 | 160             |
|         | 17-Oct-85 | 1.1  | 10   | 3.3  | 39.0  | 2200               | 310                | 50              |
|         | 22-Nov-85 | 1.0  | 28   | 5.2  | 52.0  | 2900               | 260                | 100             |
|         | 19-Dec-85 | 0.6  |      | 3.2  | 61.0  | 540                | 60                 | <20             |
|         | 11-Apr-86 | 0.3  | 30   | 2.0  | 31.8  | <20                | <20                | 40              |
|         | 29-Apr-86 |      | 10   | 2.9  | 26.7  | 540                | 116                | 40              |
|         | 08-May-86 | 0.6  | 4    | 3.4  | 49.0  | 820                | 28                 | 24              |
|         | 09-Jul-86 | 1.6  | <2   | 3.6  | 44.0  |                    | 840                | 440             |
|         | 10-Sep-86 | 1.0  | 10   |      |       |                    | 2000               | 210             |
|         | 02-Dec-86 |      | <2   | 2.4  | 40.0  |                    | 12300              | 5100            |
|         | 18-Aug-87 | 5.9  | 118  | 6.3  | 50.3  | 5200               | 1056               | 500             |
|         | 21-Oct-87 | <1   | 35   |      |       | 3000               | 300                | 280             |
|         | 01-Dec-87 | <1   | 11   |      |       | 11600              | 1330               |                 |
| SW18    | 01-Dec-87 | 4.0  | 37   |      |       | 3000               | 470                |                 |
| SW19    | 01-Dec-87 | 4.0  | 38   |      |       | 123000             | 1900               |                 |

## BURLINGTON LANDFILL SITE

PROJECT 87-224

SURFACE WATER ANALYSES ; UP TO MAY 1987 - MOE LABORATORY

AFTER MAY 1987 - HALTON LABORATORY

| STATION | DATE      | COND                | HARD | ALK  | pH  | CHLORIDE   | TOTAL SOLIDS | DISSOLVED SOLIDS | SUSPENDED SOLIDS | IRON       | PHOSPHOROUS (TOTAL) | SOLUBLE PHOSPHATES | TOTAL KJELDAHL NITROGEN | AMMONIUM    | NITRATES    | NITRITE     | PHENOLICS |
|---------|-----------|---------------------|------|------|-----|------------|--------------|------------------|------------------|------------|---------------------|--------------------|-------------------------|-------------|-------------|-------------|-----------|
|         |           | COND25<br>umho's/cm | mg/L | mg/L |     | CL<br>mg/L | RST<br>mg/L  | RSF<br>mg/L      | RSP<br>mg/L      | FE<br>mg/L | P<br>mg/L           | P<br>mg/L          | TKN<br>mg/L             | NH4<br>mg/L | NO3<br>mg/L | NO2<br>mg/L | ug/L      |
| SW20    | 11-Apr-86 | 6740                | 2437 | 320  | 7.9 | 1519       | 5680         | 5650             | 25.9             |            | 0.14                | <.01               | 2.00                    | 0.30        | 1.20        | 1.260       | 10.6      |
|         | 29-Apr-86 | 5380                | 1910 | 378  | 8.0 | 964        | 4230         | 4180             | 44.9             |            | <.05                | 0.03               | 1.50                    | <.05        | 2.80        | 2.750       | 6.4       |
|         | 09-Jul-86 | 3370                | 1142 | 233  | 8.0 | 619        | 2490         | 2470             | 18.0             |            | 0.15                | <.01               | 1.00                    | <.05        | <.05        | 0.010       | 11.6      |
|         | 01-Dec-87 | 1070                | 838  | 230  | 8.1 | 228        |              |                  | 7.0              | <.08       | <.02                |                    | 0.08                    | <.01        | 0.20        | <.02        | 4.6       |
| SW21    | 11-Apr-86 | 2630                | 949  | 755  | 7.4 | 275        | 2800         |                  |                  |            | 17.00               | 0.77               | 90.00                   | <.05        | <.05        | 0.010       | 780.0     |
|         | 29-Apr-86 | 2260                | 145  | 740  | 7.5 | 170        | 1300         | 250              | 1050.0           |            | 7.00                | 0.68               | 30.00                   | 12.40       | 0.10        | 0.020       | 234.0     |
|         | 08-May-86 | 5900                | 1734 | 1206 | 7.7 | 567        | 5240         | 4430             | 817.0            |            | 1.40                | 0.24               | 106.00                  | 45.90       | 0.20        | 0.155       | 1480.0    |

BURLINGTON LANDFILL SITE  
 PROJECT 87-224  
 SURFACE WATER ANALYSES ; UP TO MAY 1987 - MOE LABORATORY  
 AFTER MAY 1987 - HALTON LABORATORY

| STATION | DATE      | BOD5   | COD  | DOC   | DIC   | TOTAL<br>COLIFORMS | FECAL<br>COLIFORMS | FECAL<br>STREPT |
|---------|-----------|--------|------|-------|-------|--------------------|--------------------|-----------------|
|         |           | mg/L   | mg/L | mg/L  | mg/L  | cnt/100ml          | cnt/100ml          | cnt/100ml       |
| SW20    | 11-Apr-86 | 7.9    | 172  | 10.5  | 25.2  | 600                | 20                 | 80              |
|         | 29-Apr-86 |        | 84   | 6.8   | 75.9  | 7000               | 1010               | 512             |
|         | 09-Jul-86 | 6.2    | 50   | 5.1   | 50.0  |                    | 660                | 870             |
|         | 01-Dec-87 | 2.0    | 19   |       |       | 4500               | 630                |                 |
| SW21    | 11-Apr-86 | 863.0  | 1546 | 90.7  | 114.0 | 19000              | 3400               | 8000            |
|         | 29-Apr-86 |        | 2540 | 129.0 | 20.0  | 690000             | 17400              | >15000          |
|         | 08-May-86 | 2440.0 |      | 382.0 | 321.0 | 5300000            | 26000              | 22000           |

NF = NO FLOW  
 NM = NOT MEASURED